THE Desert MAGAZINE

APRIL
1938
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CREED OF THE DESERT

By JUNE LE MERT PAXTON

God would not give us skies of blue,
If skies of grey were needed.
He would not choose the thorny bush,
And leave the flower, unheeded.
No, God puts into each place
The things most needed for the race.

DESERT Calendar

for April

MAR. 26-27—Annual district music festival at Santa Fe, New Mexico.

APRIL 1-2-3—Eastern New Mexico music festival at Clovis, N. M.

APRIL 5—Annual spring flower show of the Phoenix Woman's club. Mrs. J. A. Riggins, chairman.

APRIL 8—Arbor Day in Northern Arizona by proclamation of Gov. Stanford. Includes counties of Apache, Coconino, Mohave, Navajo and Yavapai.

APRIL 9-10—Sierra Club of California to spend weekend in Joshua Tree National monument exploring Wonderland of Rocks, Hidden valley and other scenic areas. Dick Freeman, leader.

APRIL 9-17—Annual Easter week trek of Sierra Club of California to include visits to Tonto, Casa Grande, Chiricahua and Tumacori national monuments and other scenic points in Arizona. Mr. and Mrs. W. A. Van Degrift, leaders.

APRIL 12-13—Annual reunion of Arizona pioneers sponsored by the Phoenix Republic. Limited to those who have been in the state since December 31, 1890.

APRIL 17—Outdoor Easter services at South Rim of Grand Canyon and at many other points in desert region.

APRIL 17-20—Spring Corn dances at Cochiti, Santo Domingo, San Felipe and other Indian pueblos in New Mexico.

APRIL 21-22-23—Annual state music and art festival at Las Vegas, Nevada.

APRIL 28 to MAY 1—Frontier Day "Helldorado" at Las Vegas, Nevada. Horseman's association to stage rodeo during the last three days of the Frontier day event.

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Temple Bar

on Lake Mead
By H. P. GOWER
Death Valley, California

First prize photograph in the February contest of the Desert Magazine. Taken with a 3A kodak, stop between 11 and 16, 1/100 second, from a boat traveling 20 miles an hour at 8:00 a.m.

Prospector

By CAL GODSHALL
Victorville, California

Second prize award. Taken with a Speed Graphic on Agfa superpan press, f11, 1/440 second at 10:00 a.m. January 6, 1938.

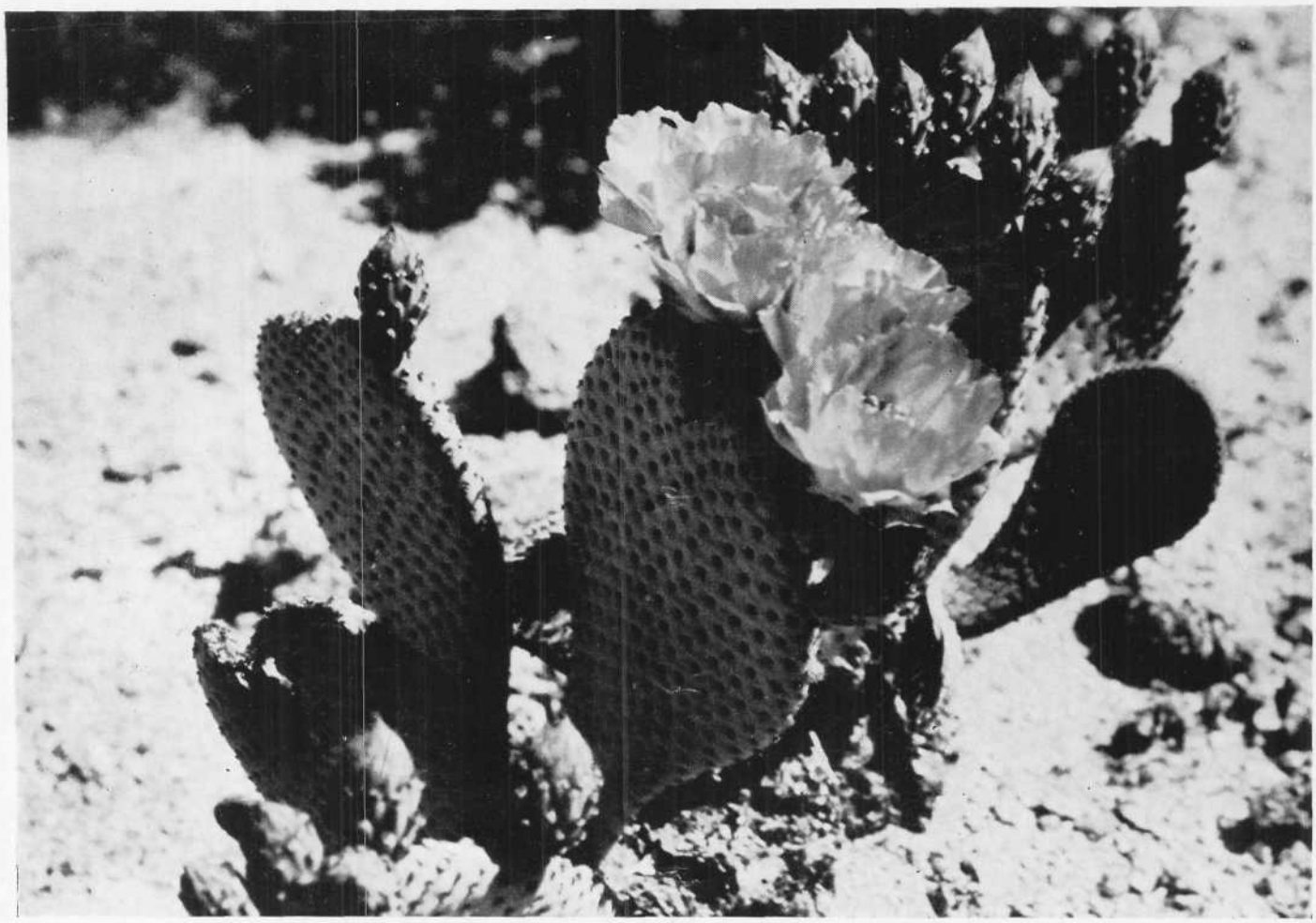


Photo by Duke Clarke

They Learned about Cactus from Beavertail

By DON ADMIRAL
Palm Springs Naturalist

ADMIRE the soft smooth complexion and the exquisite coloring of the Beavertail cactus if you will—and it is worthy of all your admiration—but do not try to brush away the little brown dots which adorn its velvet jacket.

More than one visitor to the desert has learned about cactus from Beavertail. Those innocent appearing specks are nothing more nor less than tiny clusters of sharp needle points. They are almost invisible to the eye—but each little barb carries a sting of its own. And more pity to the tenderfoot who would use his teeth to extract them from his palm.

Nature has provided Beavertail with a weapon so effective that even the rodents of the desert are wary of too close an approach.

The joints of this cactus are broad and flat, somewhat resembling the shape and size of a beaver's tail—hence the common name. *Opuntia basilaris* (Engelmann and Bigelow) is the scientific name. *Opuntia*, the genus name, is an old Latin term; *basilaris*, the species name, refers to the joints which grow from a common base. There is a variety, *brachyclada* (Griffiths) (Munz), composed of plants with smaller and reddish joints.

A single cactus may be composed of one joint or many, 20 or even more. These joints are wrist-shaped where they join the common base. They grow to a height of four to ten inches and usually are single although it is not uncommon to find a second joint growing from the top of the basal joint.

Along the upper edge of the joints the flowers crowd each other, forming a crown of magenta loveliness. Occasionally, as if to show its versatility, a white blossom appears. During the spring of 1937 I found a plant on the southern edge of the Mojave desert on which I counted 84 blossoms. Then I counted the flowers which already had withered, and the buds, and arrived at a total of 237 blossoms representing the season's display on that one plant.

The bud of the Beavertail is a food highly prized by the desert Indians. There are a few needle-like spines to be brushed off, and then the buds are placed in a pit and steamed with hot stones for about 12 hours. Modern methods now have entered the picture and simplified the problem of preparing the food. One of the Indian women on the reservation at Palm Springs is planning to preserve the buds in modern glass jars.

Beavertail cactus is rather widely distributed in the interior valleys of California and the desert areas of California and New Mexico and southward into old Mexico. The variety, *brachyclada*, occurs in Cajon pass and the western Mojave areas above the 2500-foot elevation.

Superstition Mountain, Arizona *Photo by McCullough Brothers, Phoenix*

Trekking for Treasure

Treasure, literal and figurative, has enriched Arizona's Superstition Mountain for aeons, and legends of the treasure have intrigued The Dons Club of Phoenix since its organization eight years ago. Young business men who are earnest students of desert lore, The Dons in 1934 launched a "Lost Gold Trek" to Superstition. It gripped public imagination instantly, is now called "the most extraordinary entertainment in western America."

By VIRGINIA DUNCAN

IT IS 8 o'clock and the fierce, wild peaks of old Superstition have pulled their shadow blankets up close around them for the night. We sit at the foot of one of its sheer cliffs—human ants beside the wall of red rock 800 feet high—and marvel at the incomparable brilliance of desert stars. Rocks on the horizon take on the forms of treasure hunters who have died there, and sahuaro cacti are silhouetted like ghosts themselves. We are miles from civilization, miles even from a filling station, a trading post, a telephone. Then a handsome young man, dressed in colorful Spanish costume, steps out and lights a two-cord pile of wood—stacked like a tepee—and the now renowned Superstition Mountain Lost Gold Trek has reached its climactic hour!

The costumed young man is a member of the Dons, a club of adult students in Phoenix devoted to desert legend and lore. I am a guest of the club along with some 500 others. All day we have been on a nominal search for treasure in beautiful old Superstition Mountain, and if we lack actual gold we nevertheless have found treasure indeed! This Trek of the Dons is the most distinctive outing I have ever experienced, a full day and evening of back-to-nature communion without benefit of ballyhoo, loud speakers or microphones.

The ironwood tepee is filled with dry pine kindling, so that the clubman's match sends up an immediate blaze.

In five minutes the flame is crackling, twisting, roaring up 50 feet or more, illuminating our faces, casting fantastic shadows on the great red cliff. The scene is so impressive it leaves one gasping in sheer awe. We are seated in a natural rock amphitheatre, a little arroyo that skirts the mountain. The cliff is a backdrop. Beside, but not too near the campfiire is a leveled space about the size of an ordinary living room floor.

When the blaze is at its height—

"OOM-OOM, OOM-OOM,
OOM-OOM!"

From somewhere in the darkness comes the sudden rumble of tom toms. The weird noise chills us. Have the savages that once lived on this very spot come back to life?

They have indeed! For immediately a party of painted, costumed warriors appear in the firelight. They begin chanting— "EE-yah, EE-yah, EE-yah!" The crowd, the 500 palefaces, are breathless with interest.

The rhythm changes then to a faster one.

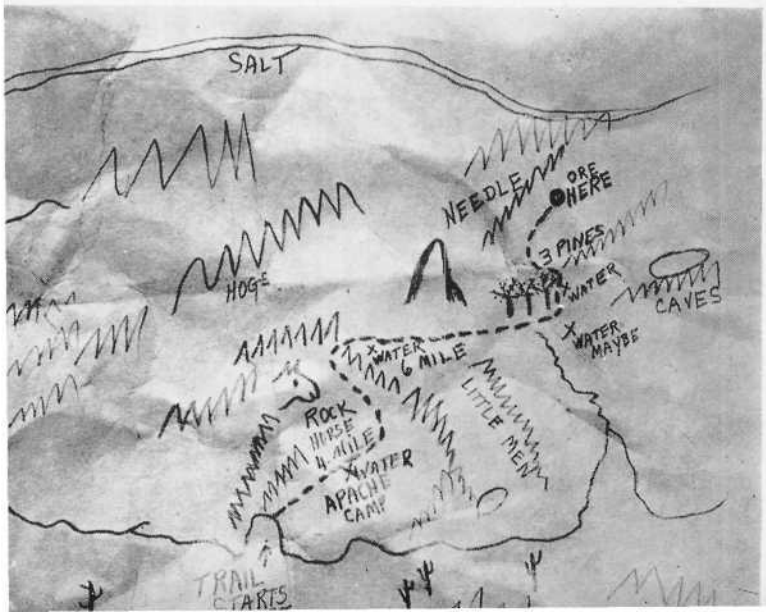
"OOM-oom-oom-oom OOM-oom-oom-oom EE-yah-yah-yah." The redskins are swaying and circling and stamping in an aboriginal American dance which the finest students on Broadway cannot equal. They are giving vent to emotions which white folk cannot even understand, much less interpret. There are bizarre, minor cadences, penetrating sounds that remain in the memory forever.

Then the Dons who are directing our program change the mood and regale us with humorous stories of the desert land; ply us with the limitless legends of gold in the Superstition. They bring on a cowboy orchestra twanging its guitars and harmonizing in such favorites as "Home On The Range."

Scarcely have we done with humming the beloved chorus when a new music picks up from somewhere in a faster melody and key. The cowboys have faded back into the shadows, and now—Don Alonzo Aguilar, Señor Jose Cota, Señoritas Maria Luisa Perez and Josefina de Carillo y Montoya are swinging in the gorgeous dances of old Mexico and thrilling us with Sonoran love songs. From somewhere have come "Los Charritos" orchestra, a string ensemble of elderly Mexican men in gay costume, men who cannot read a note of printed music but who play from the heart practically everything that they once hear. They accompany while Jose and Josefina do "El Jarabe Tapatio," perhaps the most beautiful dance brought here from old Spain.

Mrs. Sina Lewis, mother of 13 children, a veteran prospector who spent several years looking for the Lost Dutchman mine in Superstition. Shown here panning pay dirt.

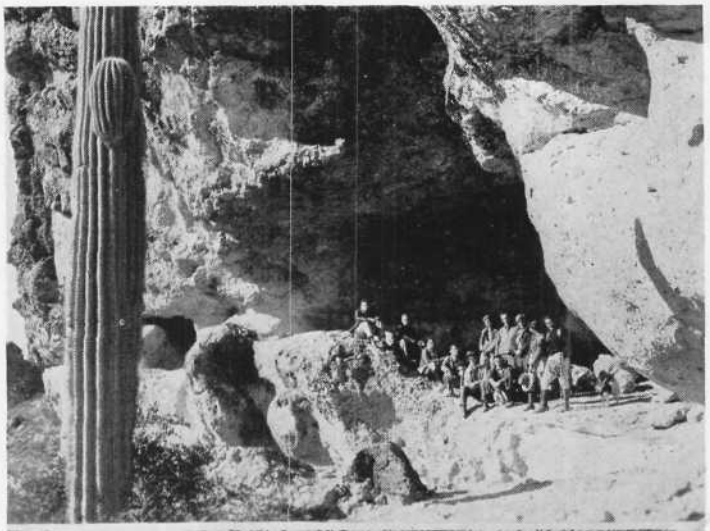
Map to the lost mine in the Superstition. Probably a fake and typical of many such sketches that are in circulation. Landmarks are fairly accurate.



When two hours of this extraordinary entertainment have ended and the fire has died to a great mass of intense coals, the Dons' president makes a brief farewell speech, then points to the top of the cliff behind us. Lo— the dark, forbidden heights have been climbed in the night by other Dons, and now the whole upper area is painted in a luminous brilliance of red and yellow and green!

Flares thus light us to our cars, parked out of sight a quarter mile down the trail. When we have wound out the desert trail and back eventually to the highway, there is a feeling of satisfaction and happiness that defies words.

We had started this day at 9 a. m., traveling from Phoenix. We realized we 500 were lucky, for we got the first reservations. More than 2,000 had applied! We began with hiking, flower study, cactus study, collecting rocks, hunting arrow heads, probing into prehistoric dwellings, exploring old Indian caves, sketching, photographing, lolling in the sun, visiting old abandoned mining camps. At noon we were fed a generous lunch with hot coffee and tea. At 5 p.m., tired from an afternoon in the open air, we were revived with an elaborate hot Spanish dinner with more coffee and tea. We sat around and watched Indian craftsmen at work, chinned with prospectors who came to the party, listened to impromptu singing and watched the gloriously costumed Dons with their even



Above—At the entrance of Geronimo's Cave, high in the cliffs of Superstition. Once a stronghold of the Apache Chief for whom it is named.
Below—Dons Club members (Spanish costumes), Indians, cowboys on a Lost Gold Trek to Superstition.

prettier costumed sweethearts and wives. Then the 8 o'clock program began.

For 10 years I have made an intensive study of the desert country, and I have traveled extensively elsewhere. Nothing have I found—not even excepting the New Orleans Mardi Gras or the Pasadena Rose Parade—that excels in interest and beauty this Superstition Mountain Lost Gold Trek; due, I feel sure, to the fact that it is not a "show," but a cooperative experience based on the dual appeals of romance and lost treasure. The two things that fascinate men most (and women!) are love and gold. When you can combine the two appeals, you usually have something of extraordinary interest, and exactly that has been done here.

The love story and the beginnings of gold lore in Superstition Mountain date back to the past century. It is a word-of-mouth history which has made Superstition the most alluring mountain in America, an eastern college professor declared. The original "hero" is one Don Miguel Peralta, a rancher in Sonora, who first worked the mine in Superstition.

He acquired it by accident in the 1840s. His daughter, pretty Rosita, was attacked by a handsome young man. The young man eventually was killed in an accident while fleeing Don Miguel's wrath, the legend tells, but not before he had discovered a rich outcropping of gold ore. Don Miguel took the ore, forgot the insult to his daughter.

He named his ore supply "La Mina Sombrera" (The Hat Mine) because it was near a central peak in Superstition which resembled the crown of a Mexican hat. He worked it for some years until Apache Indians massacred his last big cavalcade of miners.

Years later, when the United States had acquired the area now known as Arizona, a Dutchman named Jacob Walsz took the mine from three Mexicans, killing them to do so. Walsz worked it for years, and before he died confessed he had killed several others in order to retain ownership of his rich property. He died in Phoenix in 1892, trying first to tell some friends of the mine's location. He had concealed the shaft, to wait until people should stop trying to follow him in.

The friends could never locate the mine, and to this day the place is called The Lost Dutchman. It is near the peak but Superstition is a vast, rugged area. The peak has since been re-named Weaver's Needle, because its shape also suggests an oval needle used for weaving rugs and such things. That is your only clue today, if you go in quest of Superstition's gold.

Many have searched. Even in recent years newspaper headlines have proclaimed the national interest in Superstition's tragedy and romance. Remember Adolf Ruth of Washington, D. C., who went into Superstition in 1930?

Ruth, aged 66, carried a map he had obtained in Mexico. It may have been a genuine map, nobody knows. He never came out, never was found despite long searching. Eventually a hound dog with an archaeological party found his skull under a palo verde tree, and then his body was found. Somebody murdered Ruth, for his map was missing! The case has never been solved.

There are many other mysteries incident to the mountain's gold. Some persons have just disappeared up there. Some have died of thirst or hunger. Authorities have warned the public not to go in without adequate provisions and guides. These things all add to the lure of the mountain, contribute to its mystic charm.

It is on this factual background that the Dons' Lost Gold Trek has been developed. People naturally wanted to see the mountain, to visit the actual scene of so many dramatic events. The Dons sought, not to make it a chamber-of-commerce enterprise, but to preserve its traditional interest for earnest students of folklore, scholars, authors and naturalists. This they have done, in a strictly non-profit non-commercial enterprise.

It is regrettable that only 500 guests may go each year, but the number is limited by the physical necessities of accommodating the members of the Trek at campfire and meals.

The Dons of Phoenix, laudable as their efforts are, have no monopoly on this sponsorship of desert lore and legend. Rather, they have shown the way for other organizations and groups to seek out and preserve the traditions of their own desert communities to the end that the real charm of the desert country may be disclosed.

Money is not everything! The beauty of the Lost Gold Trek to me is its freedom from cheapness and salesmanship. One could not even buy a pack of cigarettes that day, and the nearest filling station was 25 miles away.

The Dons are preserving the lure of the desert without defiling it. The desert, above any other region, is replete with possibilities of this kind. If the desert influence could play a greater part in the lives of young men and women—and the Hollywood influence less—the arts and literature of the country would profit immeasurably. California, Arizona, Nevada, Utah and New Mexico—all the desert states—offer possibilities that have not been touched.

"SMOKE TREES IN FIESTA"

Halftone
Reproduction
of Painting

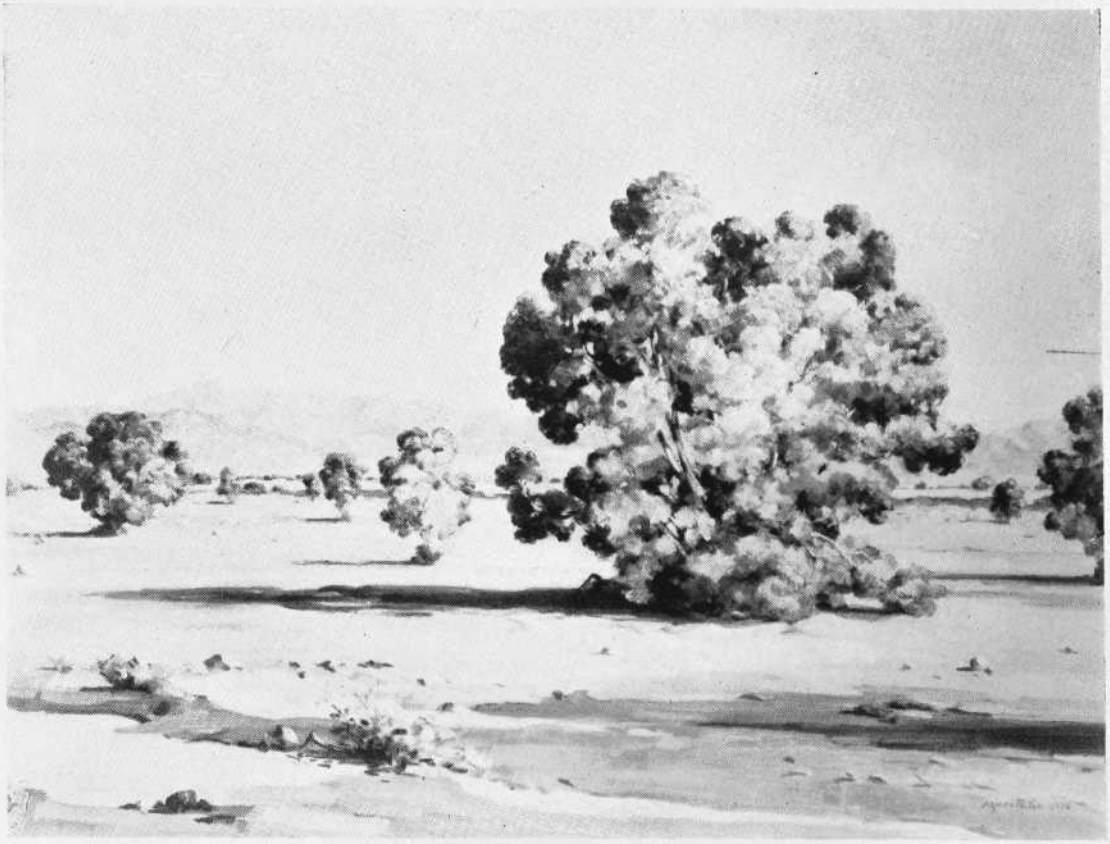


Photo by Stephen Willard, courtesy Desert Inn Art Galleries

By AGNES PELTON
Palm Springs

By JUNE DAY

So many important people in the last few years have been intrigued by the charm of the desert that it is no longer a matter of surprise when another is added to the list. Few, however, have brought finer gifts or paid homage in a more beautiful way than Agnes Pelton, artist.

Miss Pelton's work already had won widespread recognition when she moved to the desert six years ago. She established her residence at Cathedral City, California, feeling that here in the heart of the Colorado desert she could contribute something even more worth while in the development of contemporary art.

Summer and winter for these six years she has studied every whim and mood of the constantly changing natural pageant around her. From the extreme heat of summer have come several of her most important canvases. Her Smoke Trees, painted in the early summer months when the spiny leafless branches burst forth in a gorgeous purple display of blossom, are among her most beautiful creations.

Miss Pelton is one of those artists who has captured the true atmosphere of the desert. In her paintings one can feel the heat, the baked dry earth, the clean crispness of the early morning air.

As a personality she has that rare gift of inspiring those around her with greater interest and effort in the accomplishment of worthwhile tasks. There is in her character a quiet courage and faith that knows no obstacle.

She was born abroad, but of American parents. She returned to the United States at an early age and her musician mother encouraged her in the study of the piano. Early in her 'teens, however, she realized that painting rather than music was her forte, and took up the study of art.

She was a student of Arthur W. Dow at Pratt Institute in New York, studied landscape with W. L. Lathrop, and worked with Hamilton Easter Field in Italy and also during several summers when he taught at Ogunquit, Maine.

She is a member of the National Association of Women Painters and Sculptors, the American Federation of Art, the American Artist's Professional League, Solons of America, and the Riverside Art Institute.

Few artists have undertaken successfully so wide a field of painting as Agnes Pelton. Early work was in portraiture, including oriental children in costume, done during a winter at Honolulu. She also produced decorative paintings of island volcanoes and tropical landscapes.

Mention of her work would not be complete without reference to her contributions in the field of abstract art. These paintings are an effort to express through pure and direct color, glimpses of what might be called symbolic vision. The quality of her abstract paintings is unique and even those who are not impressed by this type of art will recognize Miss Pelton's work.

Her desert paintings are on exhibit at the Desert Inn art galleries in Palm Springs and many of her beautiful canvases have been acquired by eastern visitors who prize them for their true feel of the desert.

Mary and Don Williams, of Phoenix, Arizona, solved the problem of meeting school expenses by creating novel ornaments from the vertebrae of rattlesnakes. The snake shown in the picture, however, is not a rattler—just a big harmless member of the reptile family.

They Found a Market for Rattlesnake Bones

By OREN ARNOLD

MARY WILLIAMS heard the whirring when she first stepped to the ground. The night was black, but she didn't need to see. The sound—like dried peas shaken rapidly in their pods—was warning enough.

She crouched ever so slightly, and sprang back upon the porch by the kitchen door. Mary was agile; a junior college co-ed.

She should have screamed first, technically. Or, surely, she should have fainted when she was safely on the porch again. Instead she turned on the porch light and picked up a broom.

"Brother!" she called to Don Williams, studying in a front room.

"What?"

"Get the hoe or something, please, and come here."

Don brought a shovel, and found Mary holding the rattlesnake down. The reptile was four feet long and seemed quite indignant. "PLOP!" Don sliced off its head.

The rattler didn't know it, but he was really a wolf in snake's clothing. Moreover, Mary was the kind of girl who, seeing a wolf at the door, jerks the critter in and makes a fur coat of him!

Mary and Don Williams lived with their parents on the desert near Phoenix, Arizona. They both went to Phoenix Junior College, but the funds were alarmingly low. School, for them, would have to end in a few days. They had gone to the kindly dean.

"I wish I could help you," the dean had said. "I can only tell you to think, to use your fine brains. This country will continue to prosper and grow because young Americans think their way out of difficulties. They will find opportunities where we older folk would hardly even look."

Don and Mary sat on the porch and stared at the dead rattler. It had a beautiful skin, but the market for rattlesnake skins is not good. Some people like rattler meat—it is even canned in one or two places—but Don and Mary couldn't figure a sale for that, either.

"I know what," declared Mary suddenly. "I'll use him."

She picked up the carcass and put it in a pot, boiled it on the stove for two hours. She didn't let her parents know all these initial details, nor even Don. The next week Mary Williams came to Junior College wearing a perfectly gorgeous string of beads!

The other girls speculated on whether the novel beads were carved ivory. Some hinted about probable high cost. Interest in them was pronounced. Next day, Mary added ear-bobs to match—and tactfully let it be known that, well, she would sell them, if anybody insisted.

Several people insisted.

Don and Mary stayed in school. The depression that had struck Mr. Williams, Sr., began to lift, because he did not have such a financial burden and worry with his children. He did, later, spend some time telling his own cronies how proud of his two kids he was, but that was pardonable under the circumstances.

After two hours of boiling the flesh had all dropped off the rattlesnake's

backbone. The backbone had become dozens of tiny "ivory" pieces, already provided with holes for stringing! And already "carved".

Mary made some of them pure white, with a little bleaching solution from the home laundry. Others she left their natural cream tone. She strung them in many ways, alternating with crystals, working in colored beads, graduating them as to size.

She had a distinctive item of costume jewelry, a novelty which even the smartest shops in Phoenix and Los Angeles could not supply. Furthermore, Mary herself was about the world's best model.

That is, Mary Williams is a very pretty girl. She has a smile which makes you feel that this is a great old world after all; a daintiness just right to set off the novel beads.

She made some mistakes. She didn't set her initial prices high enough. But she did not lack for customers.

The shops and stores asked for wholesale lots, but she couldn't supply them. Of course, she had set up a sort of home "factory", a production unit of which her brother Don became an enthusiastic raw materials man. Don knew an old-time settler who lives several miles out on the desert. The two of them worked out a plan that made heavy inroads on the rattlesnake population.

The Williams yard had a water hydrant in it, and one afternoon in late spring, when the sun was bearing down hard, a six-foot snake came slithering across the yard to enjoy the dampness and coolness where the hydrant dripped.

"Now that," said Mr. Williams, Sr., "is not a rattlesnake. It's a gopher or bull snake, harmless to man. He eats destructive rats and things. Let him alone."

"All right," agreed Don and Mary. They let him alone. They even named him Bolivar. But they did not love him. It is difficult to love a gopher snake, because by the time you have decided he really is a gopher snake and not a rattler (when you suddenly see him coiled in the shadows) your heart already has skipped six beats. But they let Bolivar alone.

As a matter of cold scientific and sentimental fact, a snake like Bolivar is a gentleman. His kind make perfect additions to any yard or household. They catch rats and mice. They eradicate cockroaches. They stay back in shadows out of the way. They will not steal goldfish out of the bowl nor climb up on the canary's cage. And they never sit on the back fence at midnight and yowl "Meowr-r-r-r-rr owr-r-r-r-r-r!"

After a while Mary and Don had a little basket full of rattlesnake rattles, too. They aren't worth much, as is. But Mary slipped a few in with the beads, modeled a few into ear rings, thus adding a touch of noise to the beautiful reptilian jewelry.

Next day at school, and at the next college dance, Mary Williams not only wore her lovely beads and ear bobs; she shook her head daintily and displayed the newest novelty, the tiny little jeweled rattles, half an inch long.

That started the bead wearers' enthusiasm anew. People are like that—they want to collect things. Don and Mary opened a savings account.

That's about all to the true story. The incidents you can forget; but don't ever lose the moral. You never can tell when a wolf, figurative or literal, will come howling at your front door—or rattling at your back one!

* * *

Oh yes—about the photographs with this article. That's the first live snake Mary Williams ever touched in her life!

We told her she just had to pose for us, because we had borrowed a long live snake, a "Bolivar"; we wanted a sensational picture, a pretty girl with a reptile around her neck—that sort of thing. We had the beast in a large bag.

We poured him out.

"E-e-e-e-e-e!" shrilled Mary, backing away.

"Come on!" we urged. "Modern girls aren't cowards! Pick him up! "Or maybe the Phoenix girls lack nerve nowadays!"

That got her. She twined the big fellow around her neck, and otherwise posed as we requested, a very gracious girl.

We ducked our photographic neck under the camera cloth then, for a moment, and all at once the big snake plopped down on our shoulders!

"What's the matter?" Mary giggled. "Do the western men lack nerve nowadays?"

Beautifully carved ivory from the desert's most venomous reptile

▼

Even the rattler's rattles may be used for bizarre ornaments

Perpetual Ice Box on the Desert

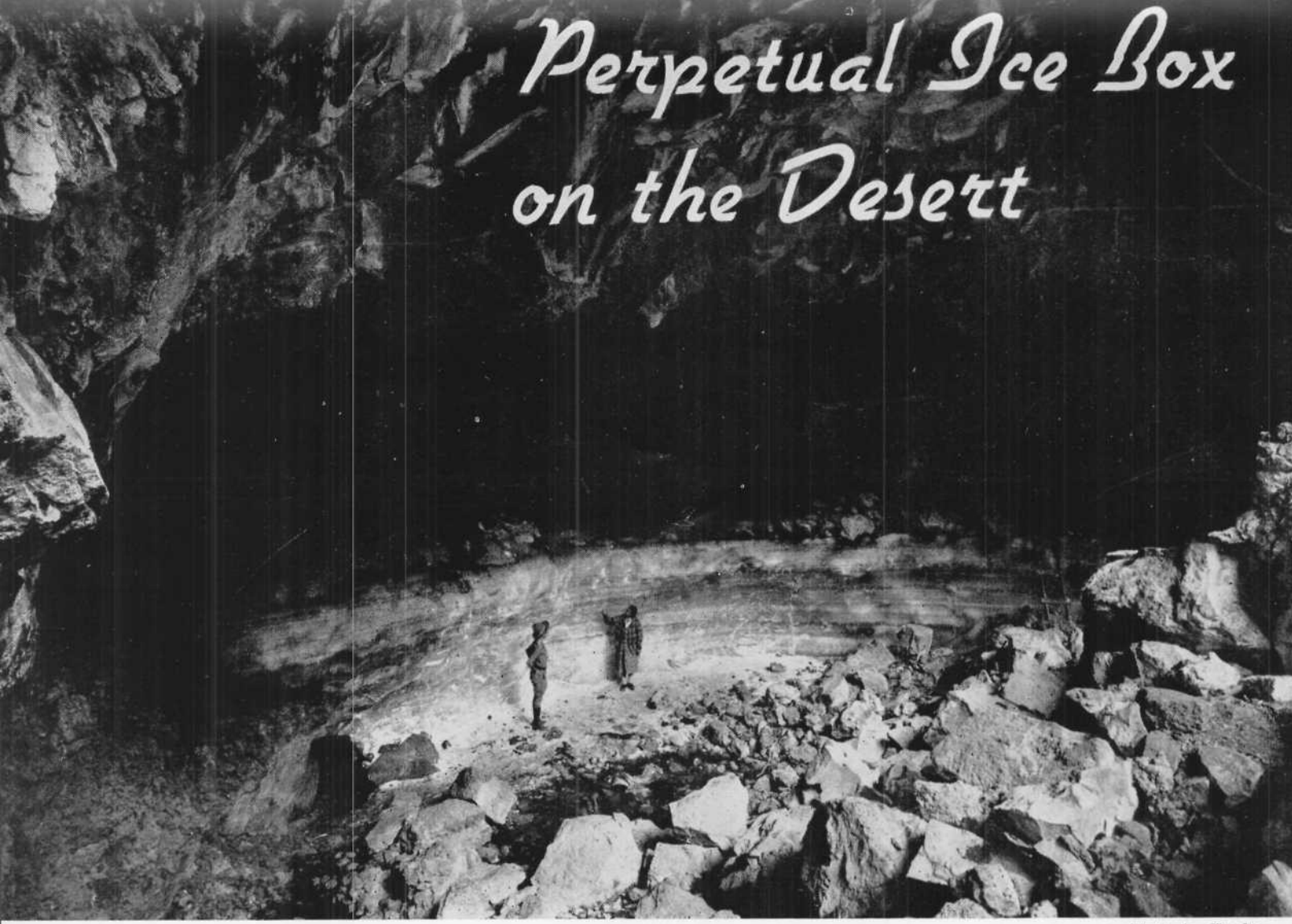


Photo by Frasher

Insulated by lava which flowed from an ancient volcano, ice never disappears from one of Nature's strange caverns in New Mexico.

By FLEMING KENNEDY

"RIGHT here," said my trail buddy Bill, who breathes contempt for all forms of tourist erosion, "is one of the few natural wonders in the desert that can't be defaced or destroyed by sticky fingered souvenir hunters! It's Mother Desert's icebox—automatic and self operating—and no matter how hot the daytime may be or how much ice may be chipped off and stolen, as long as there's snowfall and showers there'll be new ice a'growin' down here."

We were standing in the Perpetual Ice Cave, within touching distance of the great aquamarine deposit of which we had heard and whose existence we had doubted. Doubted—because we had been told the ice was to be found beneath a geologically recent lava flow.

When we hear of lava flows our minds recall pictures of smoky volcanoes in eruption, spewing torrents of molten stone—the hottest evidence of Earth's internal discomfort. A "recent" lava flow, we imagine, still might be unbearably hot. How could such a site be the resting place for a bank of ice that never has melted away?

We figured that the story might be just another Tall Tale for Tourists. Both of us were sufficiently desert-wise to know that the desert is packed with believe - it - or - not surprises, but we wanted to see—in midsummer—whether this unusual thing really existed.

The locality of the ice cave was clearly marked on our New Mexico highway guide. The map indicated an improved dirt road—leading southward from Grant, on U. S. 66, through the old Spanish village of San Rafael. The total distance indicated was 25 miles of unimproved road to be covered between Grant and the ice caves—and unimproved road in a lava country doesn't mean "boulevard!"

But since we wanted to see as many interesting sights as could be crammed into limited time, we chose to take the longer road from Gallup toward Zuni and to see El Morro in passing on our way to the ice cave. The choice was a wise one, for the glaring sun was behind us when the trail required most attention—and "trail" is the proper word for there is much sand and malpais along the way.

Every yard of our route was saturated with the history and lore of the Southwest. I hope sometime to report my observations of Zuni and Inscription Rock. Readers of the Desert Magazine may share those delights in future issues. But now we are approaching Mother Desert's Icebox.

We left our car in a wide place of the road, near a signboard which stood above a trail that headed off across the lava. The sign declared that the trail led to the Perpetual Ice Cave, but all we could see was a great expanse of grayish black lava from which grew several large Ponderosa pines and a sprinkling of scrawny undergrowth.

The lava flow had been described as "geologically recent" — which meant that it might have been cooled from the molten state about 2,000 years ago.

The gritty surface underfoot seemed hot enough to fry eggs—yet we were supposed to be approaching the abode of never-melting ice!

In that walk of 10 or 15 minutes we were glad we had worn miner's boots. Anything lighter surely would have been shredded by the sharp rocks. The reflected heat from the lava drew perspiration from our bodies. Where was that bank of so-called ice? A sign led us on—pointing toward what seemed an extinct crater, yet was not. The great hole in the lava bed actually is what is known as a "volcanic sink"—an area of lava which has collapsed into the cavern formed when molten rock continued moving onward beneath the crust of that which had hardened.

We estimated the depth of the sink at about 70 feet. From the floor, which was choked with chunks of stone ranging from the size of marbles to the bulk of motor trucks, a blast of hot air enveloped us. Not volcanic gas, merely the accumulated heat from a day's unrelieved exposure to the steady rays of the sun and the Perpetual Ice Cave sign pointed down into that roasting-oven!

We clambered down the wall of the sink. The trail wound around and over great blocks of lava and ended in front of a jagged little cavern in the opposite wall.

We stumbled across the volcanic sink, groggy with heat and exertion, and climbed the heap of rubble leading up to the cavern. A breath of cool air fanned our faces before we had reached the top of the pile. We looked down into the deep, dark cavern.

Quarter-circling in a length of about 50 feet and rising to a thickness of 12 feet or so, the blue-gray-green deposit

Entrance to the Perpetual Ice Cave

of ice seems to glow like a gigantic pearl. It glows with the light reflected from the sky and admitted through the jagged opening in the wall—which is a good reason for the failure of flashlight photography to do justice to the cavern.

The ice is banded with dark horizontal lines. Close inspection shows the lines to be layers of dust, deposited before the ice mass had reached its present height, and mingled with the ice during periods of melting. The dark bands offer no means for judging the approximate age of the deposit.

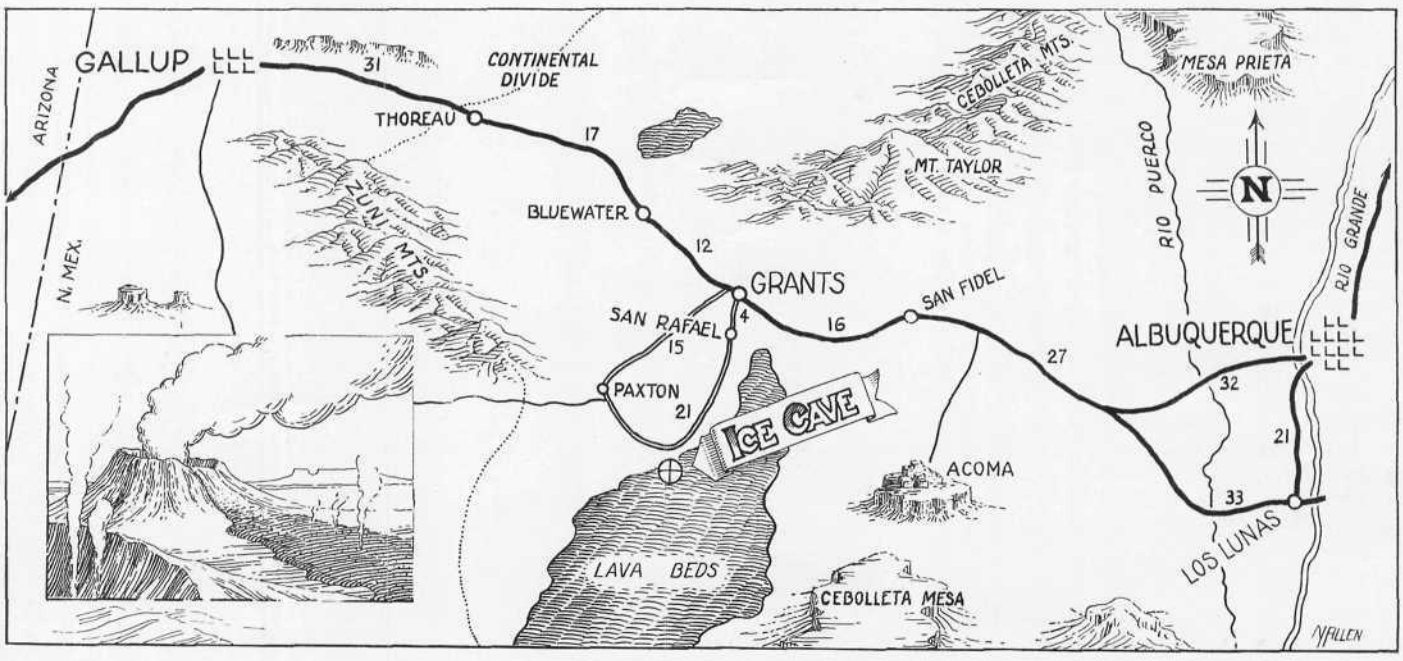
We had seen the natural wonder—but seeing had not brought understanding of it. Granting the evident fact that the ice deposit was of indeterminable age and that it seemed to have been endowed with perpetual youth, why was it so?

It required months of searching to assemble the scientific facts which I relate in a few simple paragraphs. It would take much additional space to list the authorities and accurate sources of information. Let's skip them and explain the mystery:

Since basaltic lava is porous in texture—like a sponge that has been turned into stone, it is filled with numberless air pockets. That fact makes lava an almost ideal substance for insulation against the transfer of heat. In other words, once the original heat of the mass has passed off and the spongy stone has become chilled, the lowest depths of the lava deposit will remain at the coldest temperature they have experienced.

Like the sponge, lava is a thirsty material. Melting snow and showers of rain are greedily absorbed. The moisture trickles and seeps through the tiny air cells until it meets an obstruction. If that obstruction happens to be freezing temperature, the moisture simply turns to ice.

Ice caves in lava beds are not particularly rare, but most deposits disappear in warm weather. The Perpetual Ice Cave is given its proper name because of the fact that it is unique in this respect and because it is accessible as an interesting exhibition. Here, instead of freezing in solid cold stone, water drips from the roof of a volcanic "tube" and is frozen by cold air from the subterranean depths. Mother Desert's Icebox!



HAVE YOU?

By Lois Elder Steiner

Have you ever stood on a desert hill,
Out in the desert sun,
When the heat burned into your very soul,
And you wanted to run and run?

Have you ever stepped on a cactus thorn,
And it made you sore,
And you got so mad you forgot to look,
And stepped on a hundred more?

Have you ever come in, all starved at noon,
And found ants in everything?
And while you were trying to pick them out,
Did you try to sing and sing?

Have you ever stood on a desert hill,
And watched the sun go down?
And then, as the stars came out at last,
Just couldn't go back to town?

Have you ever said to yourself at dawn,
When the desert sky was aflame,
That no other sky in all the world
Could ever be quite the same?

If you've ever lived on the desert,
I know that you've often cussed,
For there's something inside a man that swears,
When he swallows ants and dust.

But in the silence of desert night—
To us, from the heavens broad,
Sweet peace comes sifting softly down,
We put our trust in God!

SAY THAT I LOVED THE DESERT

By John Arthur Nelson

Say that I loved the desert, nothing more,
But hew no stone to mark my resting place.
Scatter my ashes o'er the desert's floor,
I crave no alien shaft to mar its face.
There I shall sleep, in gardens fit for gods,
Where perfumed winds from ocotillos blow;
Or in deep canyons where the yucca nods,
Or wild barrancas where spring floods may flow.

Then, though I'm tramped a thousand feet beneath,
Or lay like shadow'd lace across the sand,
I still shall live, and through my love bequeath
My soul's recess unto this smiling land.
Behold me thus! Wind-blown, unfettered, free!
Dust back to dust . . . Unto eternity!

DESERT PSALM

By Marion Ives

The denizens of the desert
All prayed to Pan one night.
"Make us to man an ardent friend
And not his foe to fight.

He'll find us in our desert homes,
We build on arid span,
Let him not come with harm intent
Is all we ask dear Pan."

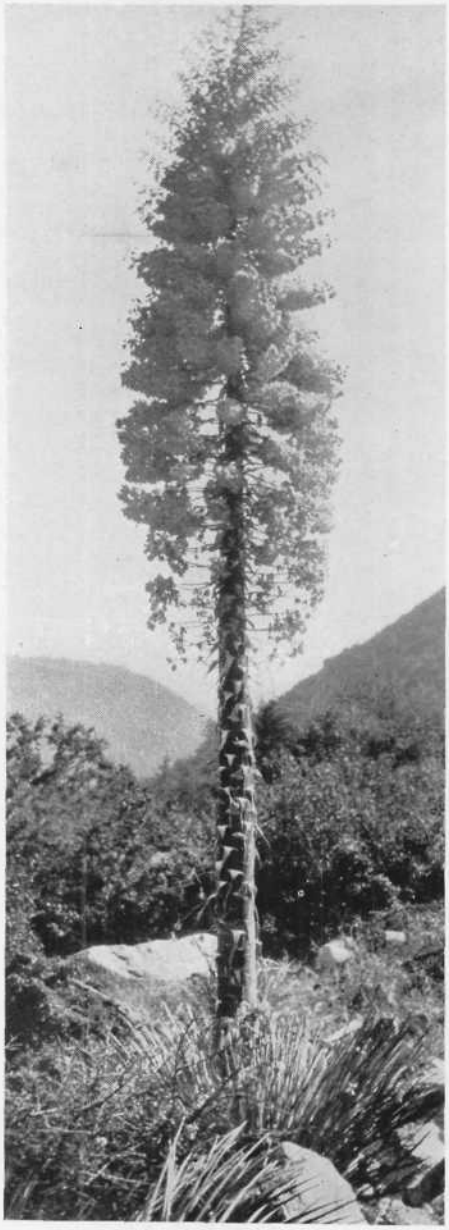


Photo by Frank T. Secrest

Yucca

(God's Own Candle)

By LESTA PURCELL

There was no altar builded here,
To hold this white and flaming spear
Of bloom.

For no churchly nave can be high enough
To clear the green enshrouded bluff
Whereon it blooms;

But no alien wind will blow the flame
Until its time is done,
For God lighted it in his own name,
And so unsheltered, the Yucca flower
Burns whitely on!

MIRAGE

By Franklin E. Ham

From crag to crag the sun's rays leap,
Purple shadows fast pursue,
Across the valley floor they sweep
To a spectral rendezvous.

Then gone the lavender, the red,
Gone the gold, the purple spread,
The blue now turns to black.
Afar, a gleam of light!
A desert town awakes
And dances in the night.

For miles on miles and days on days,
Weary steps have brought me through
The shifting sand, a broiling maze;
This, too, is my rendezvous.

I pause and watch the shimmering glow;
Falter fearful, ere I go,
My heart is filled with dread.
Perhaps I have no right
To seek this desert town
That dances in the night.

A vision once I saw therein,
Eyes, a smile and golden hair;
A crystal dawn or violin
Thrills—but she? Beyond compare!

Now hold, you wizened desert rat;
Stay, and know she smiled but that
She saw all men the same.
Let that be your requite;
Seek not this desert town
That dances in the night.

AN OCOTILLO TO THE ODES

By O. Cotillo

Sidewinder Canyon

Your lines are sweet,
As measured by the idle mind
And win applause
From those who'd rave about
Our desert world.

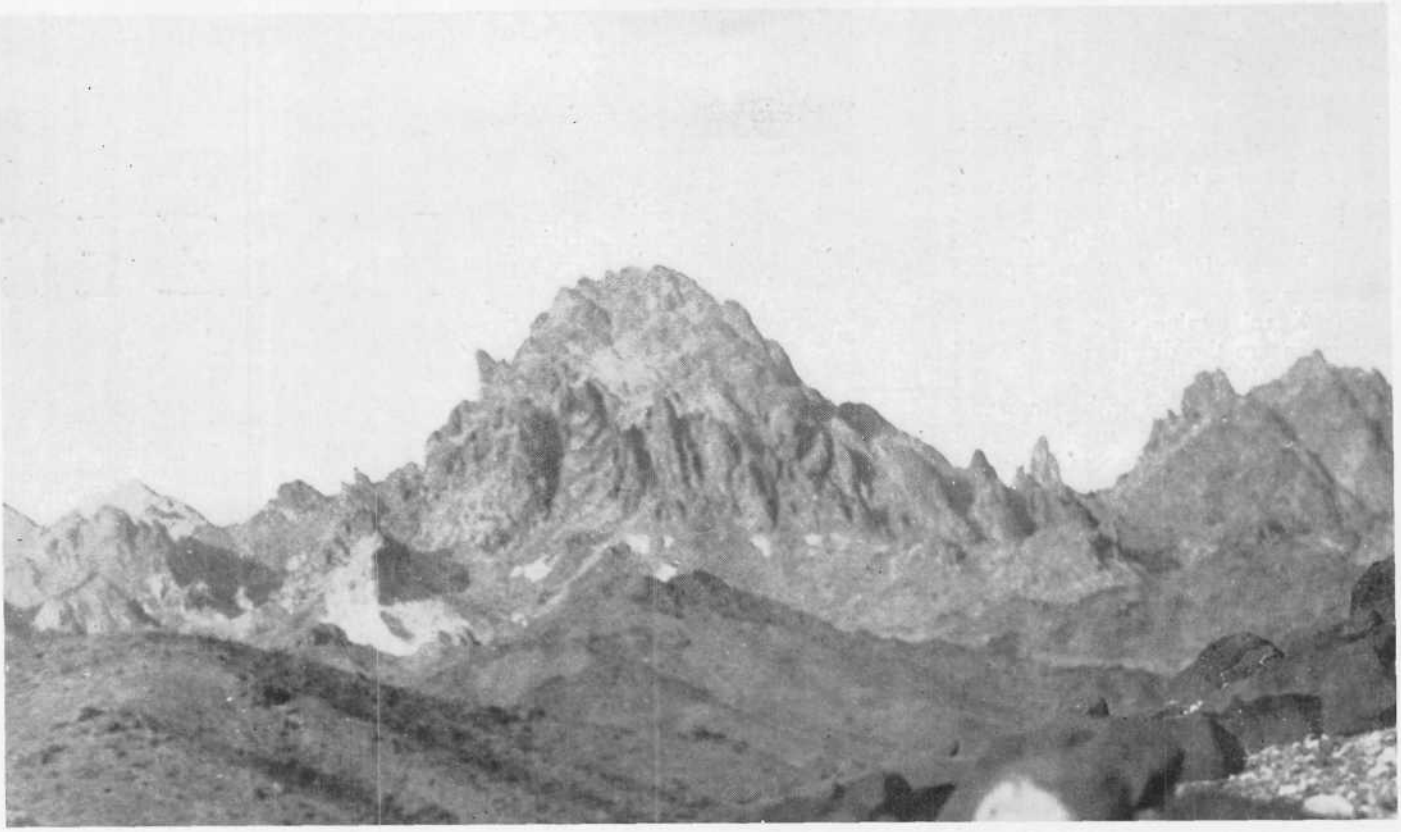
Why do you call
For praise and admiration?
We do not crave
Your tributes, toasts or rhapsodies anent
Our colorful career.

We live and bloom
To die, to live, to bloom again
Each cycle turn
A joy, a thrill as on we go
To greet the coming change.

We live in peace
Until your ghoulish friends appear
And then we weep
Knowing well the fate to come
From witless friends of Odes.

If you would be
A timely friend to us
And merit love
From desert species one and all
Just tell your friends

We do not live
That they might cut us down to grace
Their back yard fence
Or dig us up that we may die
To bloom no more.



Gems That Adorned Egypt's Mummies

By JOHN W. HILTON

Out on the Southern California Desert near the Colorado river, John W. Hilton has found Dumortierite specimens which have the color and polishing qualities of the Lapis Lazuli of the ancients. In the third desert gem article of his series now running in the Desert Magazine, Hilton provides map and directions for collectors who would like to secure some of these specimens. Above is a view of Quartz peak, landmark which guides the way to the gem field.

THE DEAD Pharaoh lay in state surrounded by royal embalmers and high priests. About him were assembled the ornate trappings of burial. From their burnished surfaces glittered the dull luster of crudely polished gems. Among these, and contrasting beautifully with the gold, was the rich blue of Lapis Lazuli, symbol of everlasting life and guarantee of immortality.

From the scarab on the hand of an Egyptian mummy on the Nile to a remote spot in the Colorado Desert is a tremendous distance, but there is a certain connection, for here on this southwestern desert so far away is a long neglected deposit of gems that might also be classed as Lapis Lazuli.

Lapis has been sought after and prized for so long that imitations have been used for it probably more often than for any other gem. In fact, so many minerals have been called by this name that it is now a matter of doubt just which one deserves the original title. The name has come to apply to a large family of stones whose only relation is their deep azure color. Hence the trade names we now encounter, such as Russian Lapis, Chilean Lapis, Oriental Lapis and Swiss Lapis. The last mentioned is a porous form of chalcedony mined in South America and cleverly dyed in Germany.

Pliny the Elder describes Lapis Lazuli as "stone of the sky" containing minute particles of gold. But most of the gems of this type that have been examined proved to contain small bits of iron pyrites. Some Persian stones, however, have turned out to be the copper ore Azurite containing actual particles of gold. A find of this same type of material was made in the early days of mining in Colorado, but due to the gold value of the rock extremely little of it found its way into jewelry.

Because of the present use of the name and the beautiful color of the mineral, I do not hesitate to nominate our desert Dumortierite for a place in the Lapis family. I am by no means the first to do this. Attempts have been made over a period of about 20 years to popularize this gem without great success.

There are several reasons for these failures. The attitude of the jewelry trade, that in order to be valuable a gem must be imported has been an important factor, and in the second place there are several grades of the Dumortierite. By far the most of it is not fit for gems because of its rough grainy texture. Boulders were gathered without proper regard for this important characteristic, giving rise to the general belief that the material would not take a good polish. Added to this is the hard but fibrous character of even the best grades, making it practically impossible to produce a good surface with the use of ordinary polishing agents.

Color was also a stumbling block to both collectors and lapidarists. Those who selected the darkest blue rough material were disappointed to find that after polishing the color had deepened almost to black. Some of the lighter

bright blue shades of the material deepen to a fine Lapis shade on being polished and those containing small white spots are especially good.

This deposit of Desert Lapis is accessible to collectors, and the trip is well worth while for its scenic and historic interest. The road leads north from the Yuma highway to Ogilby on the railroad. Near Ogilby are many points of interest.

The Kyanite mines are well worth seeing, as are the diggings of the old American Girl mine where Mr. and Mrs. John J. O'Brien with a crew of 110 men are opening up deposits of gold ore missed by the operators in the early boom.

Farther on are the settlements of Hedges and Tumco where for years thousands of men toiled to wrest over $11,000,000 in gold from the stony heart of the Cargo Muchacho Mountains.

Back on the graded road again is the Gold Rock ranch where the Walkers have created a unique home on the desert. Their front yard, with its gate and its cactus gardens framed in colored minerals, is a thing of real beauty.

Continue northwest from there to a turn off marked 4-S Ranch. Here our trail leaves the road to turn right toward Indian pass and the Colorado river. The mining roads turning right toward the Cargo Muchacho Mountains should be disregarded, as should the faint trails to the left a little farther on.

Against the skyline ahead will appear a long flat topped black mesa and at the east end of this mesa is a large pointed butte of the same material. Between these two looms a ragged volcanic upthrust. The correct road follows a general course toward this landmark. Off to the southeast rise the majestic spires of Pichacho peak, which must not be confused with the other landmark just mentioned.

At a point about ten miles from the Gold Rock ranch the road leaves the desert floor. From here nearly all the cross-washes contain desert lapis. This material is part of an ancient river bed and is not found in place. The mountains that formed these gems have probably been eroded down below the level of the present surroundings.

The large boulders in these stream beds do not appear to be of gem quality but here and there small water-worn pieces of good blue are found. These should be slightly translucent on the edges and have a smooth weathered surface if they are to be polished.

It is better to come home with a few of these fine pieces than to load the car with large worthless boulders. Here, as always, the rule of sportsmanship applies, "take some and leave some for the other fellow." I hope to describe some very interesting gem localities in these pages from time to time and the attitude my readers show toward this rule on these first trips will determine how much I dare to reveal.

DUMORTIERITE

This mineral was named after Eugene Dumortier, French paleontologist. It is defined as a bright blue or greenish blue basic silicate of aluminum, usually in fibrous or columnar aggregates. It has a hardness of 7 and specific gravity of 3.26 to 3.36.

PRIZES

to amateur photographers

Each month the Desert Magazine offers prizes of $5.00 and $3.00 for the first and second place winners in a prize contest for amateur photographers.

All prints must be taken on the desert and the subjects may include close-ups of plant and animal life, unusual personal pictures, desert homes and gardens, weird rock formations and landscapes and scenic shots.

Composition, lighting, focus and the other fine points of photography will be no less important than subject.

Rules governing the contest follow:

1—Pictures submitted in the April contest must be received at the Desert Magazine office by April 20.

2—Not more than four prints may be submitted by one person in one month.

3—Winners will be required to furnish either good glossy enlargements or the original negatives if requested.

4—Prints must be in black and white, 2¼x3¼ or larger.

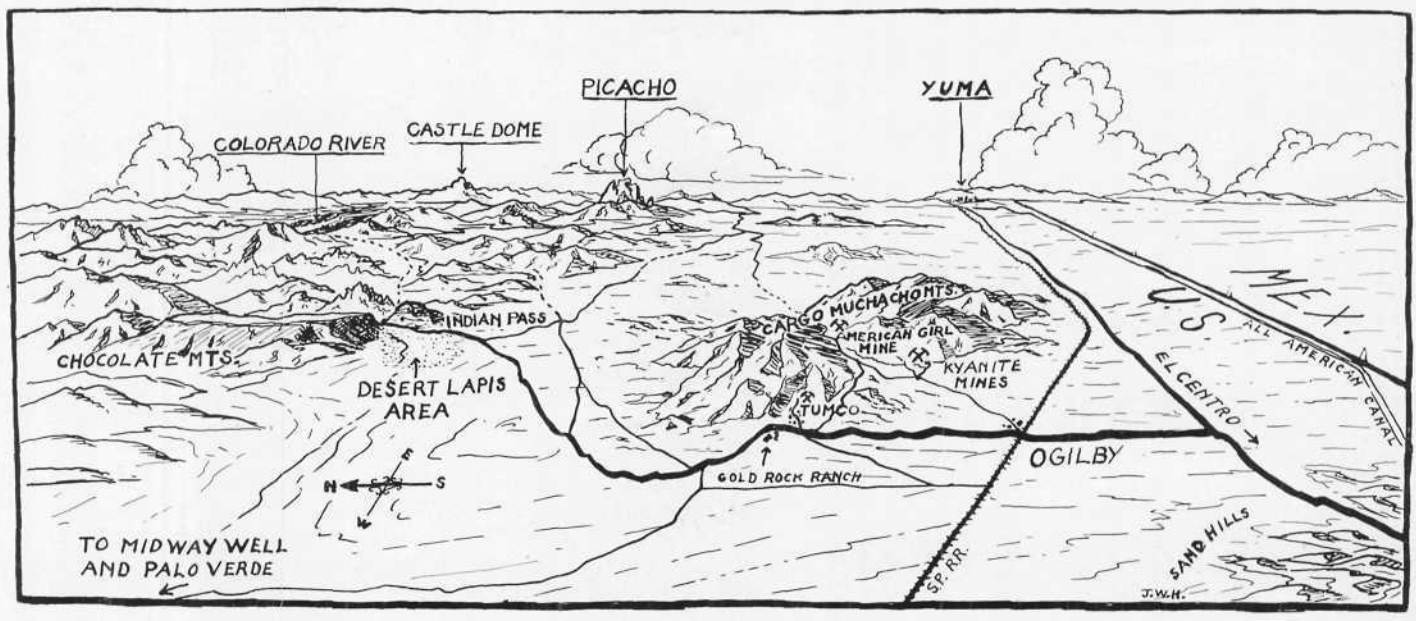
5—Pictures will be returned only when postage is enclosed.

For non-prize-winning pictures accepted for publication $1.00 will be paid for each print.

Winners of the April contest will be announced and the pictures published in the June number of the magazine.

Address all entries to:

CONTEST EDITOR, DESERT MAGAZINE, El Centro, Calif.



NAVAJO SILVERSMITH *Photo by W. M. Pennington*

The "Feel" of the Desert

By JOHN STEWART MacCLARY

ARTISTIC EXPRESSION for Navajo men is displayed in handmade silver ornaments. Since no metals were known to Southwestern Indians when sixteenth century Spaniards first entered the region, it naturally is believed that the working of silver was introduced by the conquering invaders.

For centuries, it seems, the Indians and their ancestors had fashioned necklaces and ear-pendants from unpolished bits of turquoise. Silver ornaments, contrasting with coppery skins, caught the fancy of the Indians. They combined blue turquoise settings with the silver ornaments and produced native jewelry of barbaric beauty.

White visitors became interested in the unusual bits of native jewelry seen in the Indian country. Collectors and souvenir-seekers purchased the trinkets and asked for more. The art-craft of silversmithing brought unexpected cash returns into the pockets of Indian men. A minor industry thus was given birth.

Originally, Mexican dollars or pesos—because their alloy was soft—provided the principal source of silver for Indian jewelry. The pesos were melted in primitive forges, the silver was shaped by hammering. Now, most trading posts carry stocks of rolled silver in varying standard thicknesses, together with assorted shapes of polished turquoise settings.

Indian schools teach silversmithing; native lore transmits symbolic patterns.

Dead Indian Creek ---Hiker's Paradise

By RANDALL HENDERSON

ON THE MAPS it is marked "Dead Indian Creek." But none of the old-timers in Coachella Valley, California, is sure about the identity of the Indian. And it really isn't a creek—except on those rare occasions when a flood of storm water surges down from the mountains and fills the dry stream bed with a raging torrent.

Dead Indian is one of the many scenic canyons in that long spur of mountains known as the Santa Rosas which jut far out into the Colorado desert and form the south rim of the Coachella basin.

To reach the desert entrance of this canyon the motorist follows the paved highway between Palm Springs and Indio. About half way between these two towns is the junction point where the Palms-to-Pines highway comes in from the south. This is the road that leads to Dead Indian creek.

From this junction a straight highway climbs gradually toward the base of the Santa Rosas four miles away, and then starts a serpentine ascent up the grade toward the summit.

There are two bridges near the end of the straight-away, and the first one spans the creek we are seeking. This bridge is 3.6 miles from the Indio-Palm Springs highway.

Viewed from the paved highway there is nothing about Dead Indian creek to distinguish it from a thousand other desert arroyos. Smoke trees and willows grow along the bottom of the sandy channel. Creosote bushes and cacti predominate on the rocky slopes above the water line, and higher up on the bordering ridges are agaves and yuccas—and more cacti.

Less than a quarter of a mile west of the bridge the broad ribbon of sand disappears behind a protruding spur of the ridge which parallels the creek on the south. There is nothing here to interest the motorist who comes out to view the desert from the upholstered seat of an automobile.

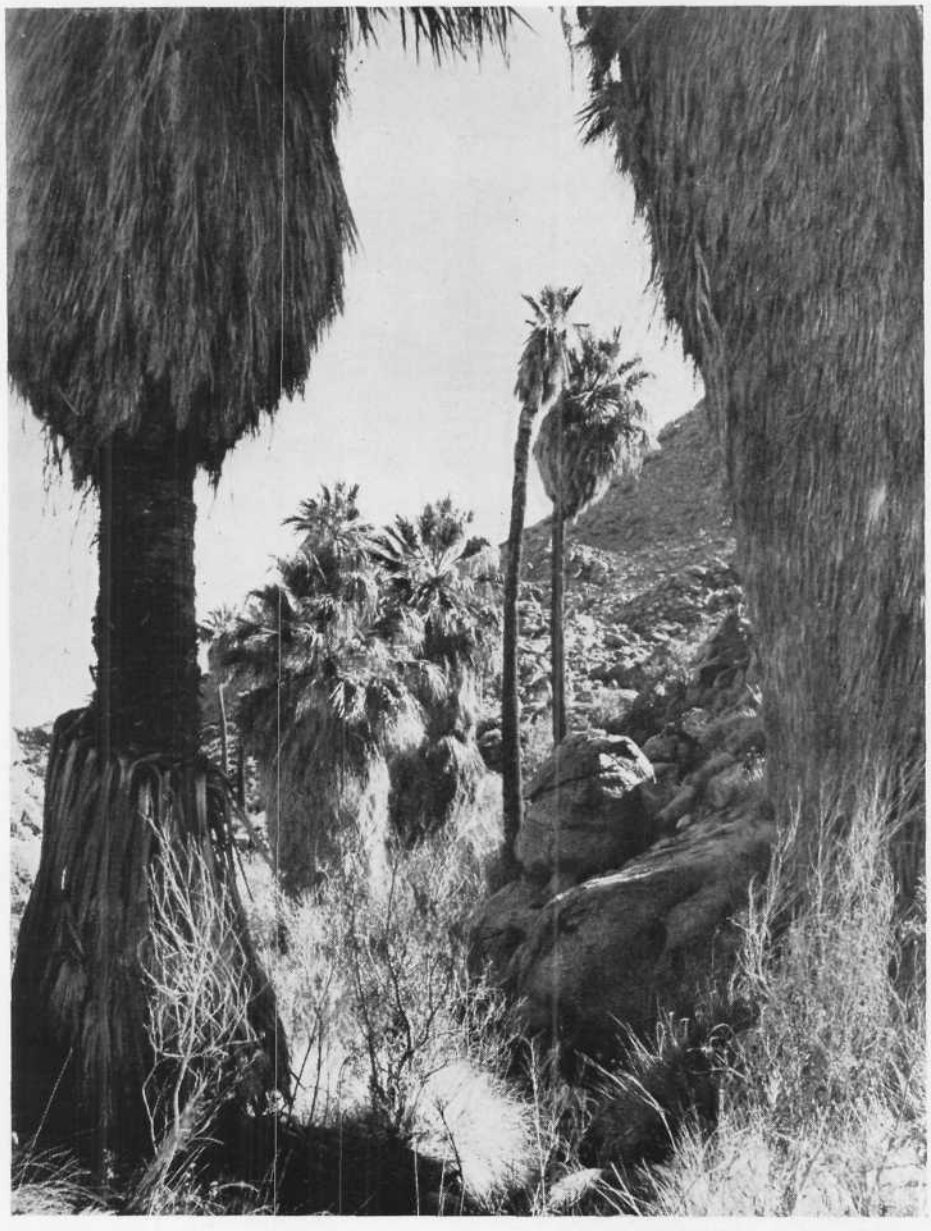
But for those who like to explore the more secluded coves and canyons, Dead Indian creek, beyond that spur, has everything the most adventurous heart could desire.

If there are children in the party, or those whose health will not permit too violent exercise, a leisurely hike up the wash will bring the visitors to a little grove of native palm trees. They are a short mile from the bridge.

These palms are grouped around a tiny spring. There are 22 trees in this oasis, but so closely are they huddled together that the invader seeking to reach the spring may imagine himself scrambling through the foliage of a tropical jungle.

There is no established trail up the arroyo. Each hiker takes his own route—and when rain in the mountains is heavy enough to send a freshet down to the floor of the desert all tracks are obliterated. Then the arroyo is clean and fresh and waiting for a first visitor to come along and experience all the thrills of a first discovery.

At the little palm oasis the canyon forks, and here the leisurely hiker ends his trek. The whole aspect of the landscape changes abruptly. The smooth sand of the arroyo disappears beneath a jumbled pile of boulders, and the ridges on both sides close in and form a massive gorge of steep broken walls.



Native palm trees in Grapevine Canyon

The hiker becomes a rock climber—or goes no farther.

The right fork, leading to Ebbens creek, is blocked by a vertical face of rock 75 or 100 feet in height. Storm water creates a roaring waterfall here at infrequent times. To continue up the canyon it is necessary to detour over the steep talus slope on the left. It is a climb which calls for good balance, and the use of hands as well as feet. Above the waterfall the canyon ascends gradually toward the fringe of piñons which dot the distant summit. Native palms appear at intervals along the creek.

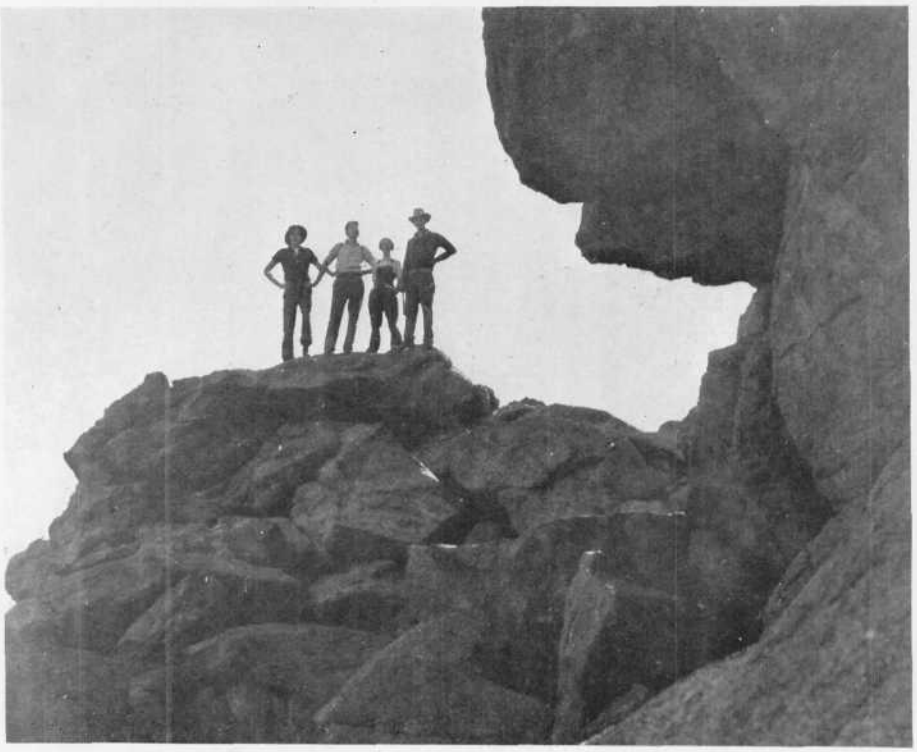
The fork which leads to the left also presents a rocky climb for those who would go in that direction. This is Grapevine creek.

For the hiker who likes his trails rough and rocky, I would suggest a trip up Dead Indian and Ebbens creeks to a point approximately three miles beyond the first palm group. Then leave the canyon and cut across the ridges toward the southeast. Eventually this route will intersect the upper gorge of Grapevine creek, which may be followed back to the forks at the palms. This is an all-day trip.

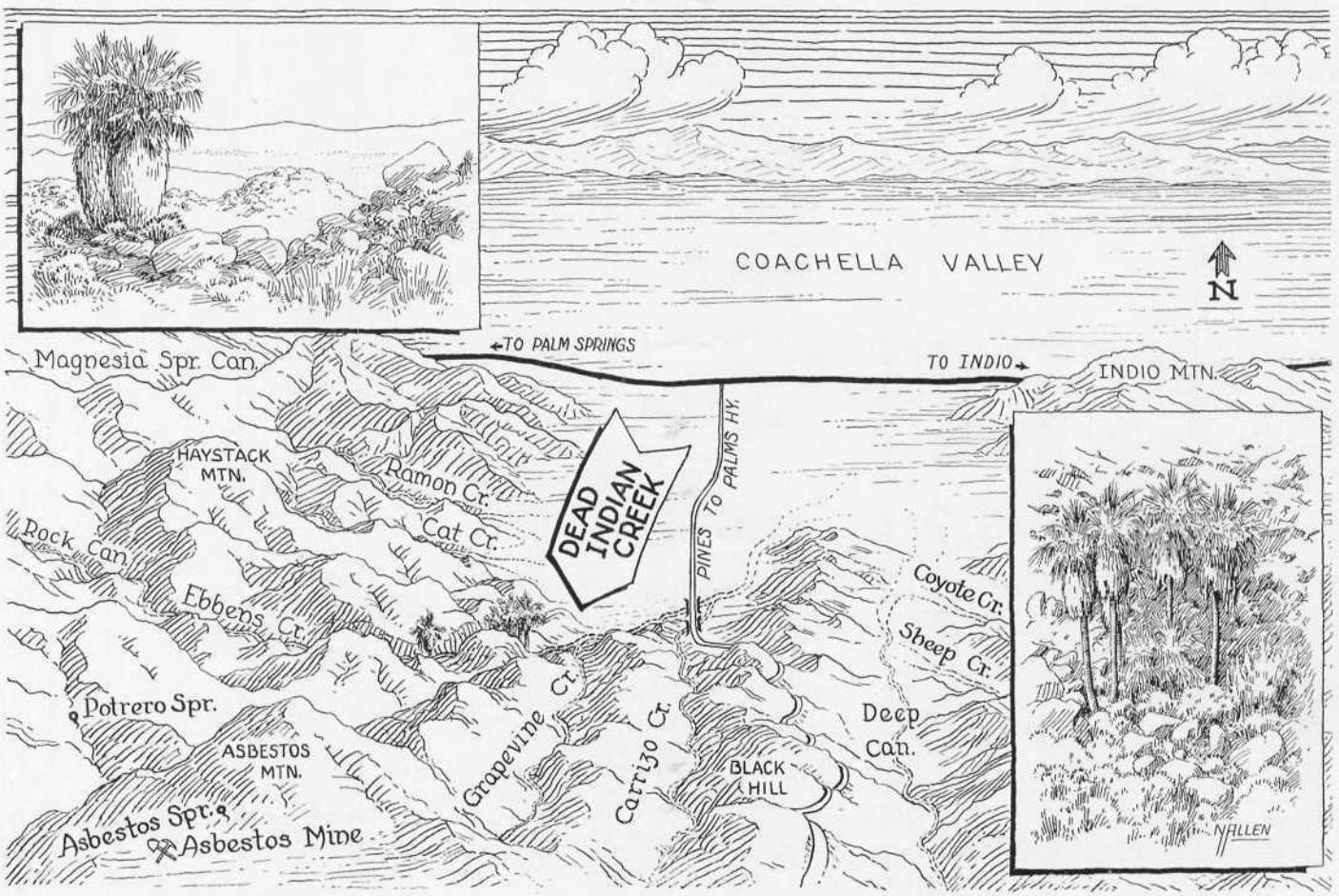
There are numerous Washingtonias in Grapevine. Occasionally one finds a piece of broken pottery or a large flat slab of granite with a mortar-hole—evidence of pre-historic Indians who dwelt by the springs which water the palms.

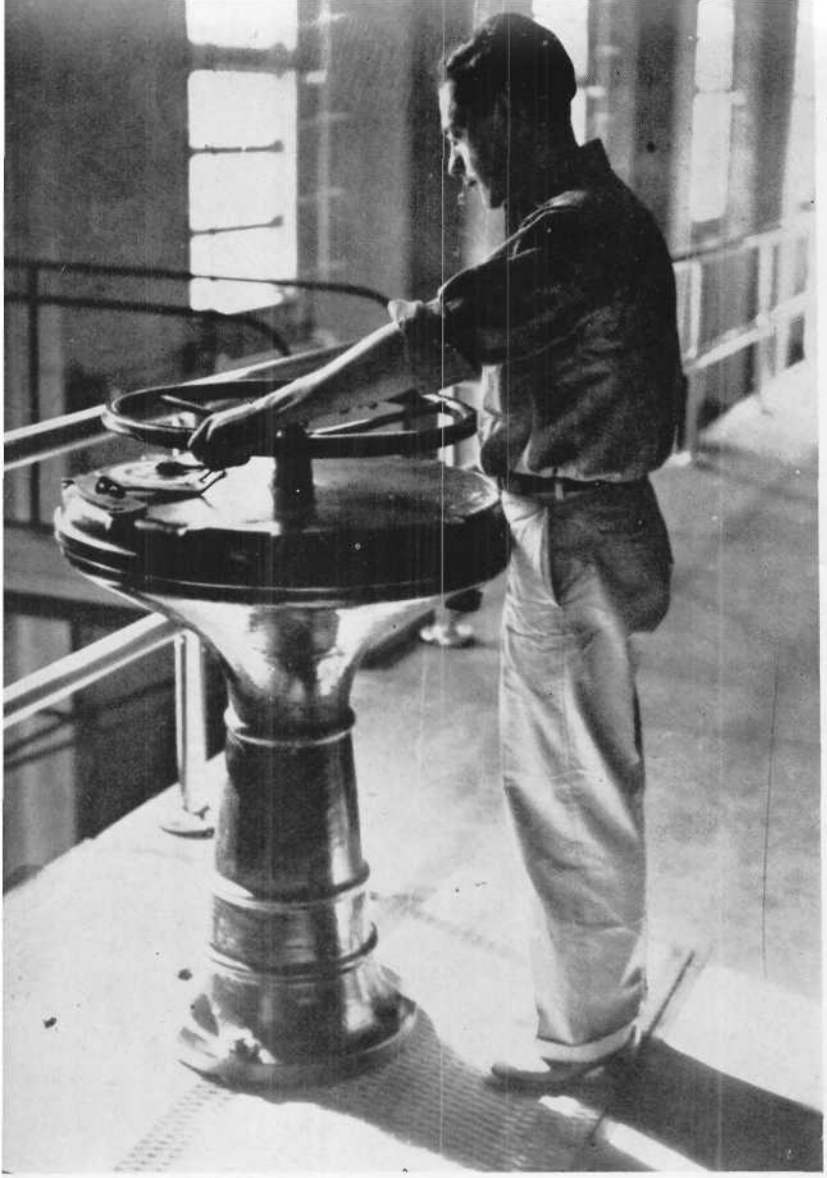
There are old Indian trails, but time and the elements have made it impossible to follow them for any great distance. However, the hiker does not

Continued on page 29



Recently the Sierra Club spent a weekend exploring Grapevine canyon. This picture was taken as a quartet of climbers paused on a rocky crest to gaze across the desert panorama below





Today when farmers in Imperial and Yuma and Palo Verde valleys want more water, they merely relay the message to Albert Sharrow at Boulder dam. By a simple turn of the wrist he can dry up the entire lower basin of the Colorado—or send downstream the greatest flood torrent the river has ever known. Here is the story of how America's most treacherous stream is kept under control every minute of the day.

Master of the Colorado

By TAZEWELL H. LAMB

"IMPERIAL calling. Our order is now 5,000 feet. Please increase it 1,000 feet, making the total 6,000. Thank you."

R. C. E. Weber, project superintendent at Yuma, Arizona, for the United States Reclamation service, gets this telephone message from the Imperial Irrigation district, 60 miles away in California. It means the 70,000 people in Imperial Valley, residents of seven cities and farmers on half a million acres, need 6,000 second feet of water from the Colorado river to meet their daily needs.

From three other points, Superintendent Weber receives similar requests for water to fill irrigation requirements in the 300-mile stretch of the lower Colorado river valley. Farmers on the Yuma project, in the Palo Verde Irrigation district, and on the Parker Indian reservation upstream, tell him their needs. He makes up an order and passes it on to Boulder Dam.

There, by one-man control as simple as turning the faucet in your kitchen sink, they change the unruly Colorado into an irrigation ditch.

The day this is written would be the second anniversary of Boulder Dam's completion, if 1936 hadn't been a leap year.

On February 29, two years ago, the contractors swept their trash out of the back door and turned the keys over to the government. Five thousand men had worked five years, spent about $109,000,000 and used 5,000,000 barrels of cement to build the works.

Now, after that output of sweat, money and material, one slender youngster at a homemade desk in the heart of the world's biggest dam handles this old bully of a river as easily as a cop controls traffic when he sticks out his hand and blows his whistle.

A flood of words has been poured over the dam—in volume bigger than any flood that ever roared through the Grand canyon on its wild way to the Gulf of California. Farmers who started the immense project to save Imperial valley from flood and drought; politicians who promoted and fought it; engineers who designed it, and the fine fellows of the reclamation bureau who manage the finished job—all have been paraded before the spotlight to take their bows.

But so far as I know, Albert Sharrow hasn't had much, if any notice. Albert is a sort of forgotten man in this dam deal. Nevertheless, he is the boy who can flick his wrist as casually as you light your pipe, and hurl downstream a flood greater than the unruly river has ever known. Or he can throw a couple of switches and dry up a big part of southern California, along with a sizeable piece of Arizona.

I want to tell you a little about him. He was born in Minneapolis 31 years ago. He's a brown-eyed welterweight with that cat-sureness which structural steel workers must have if they are to live long at their hazardous trade. He has been married ten years and worked as a rigger on three big dam jobs before he came to help build Boulder. Here a scaffolding collapsed and he fell 15 feet to a concrete platform. He landed all spread out just in time to serve as a cushion for a fellow worker who weighed 220 pounds. The heavyweight got up unhurt. Sharrow was considerably compressed, but after repairs he went back to work. Not as a rigger, however.

His job now is Master of the Colorado.

Albert wears a blue denim shirt and khaki pants and a cap perches jauntily over one eye, even when he's on duty.

When his picture was taken he removed his cap. He packs a tin lunch box and drives the seven miles from Boulder City to the dam.

On the driveway straddling the river from Nevada to Arizona he usually stops long enough to look upstream, where Lake Mead, with its 550-mile shoreline stretches away in the distance, blue under the brilliant southwestern sunshine. He likes the picture made by the lake.

Then he steps into an elevator and drops down into the bowels of the dam structure. Guides describe this elevator ride to the half-million tourists who come here every year, "Folks, you are now descending 528 feet, equal to a 44-story building." There isn't another 44-story elevator ride in this part of the world.

Through a tile-lined tunnel Albert walks to his desk in the watermaster's office. One huge window opens downstream. Directly below is the tailrace. Water released through the dam boils up there and flows away to the south, headed for the communities down the river where 90,000 people depend on it for growing crops, for lawns, for cooking, drinking, bathing, for life itself.

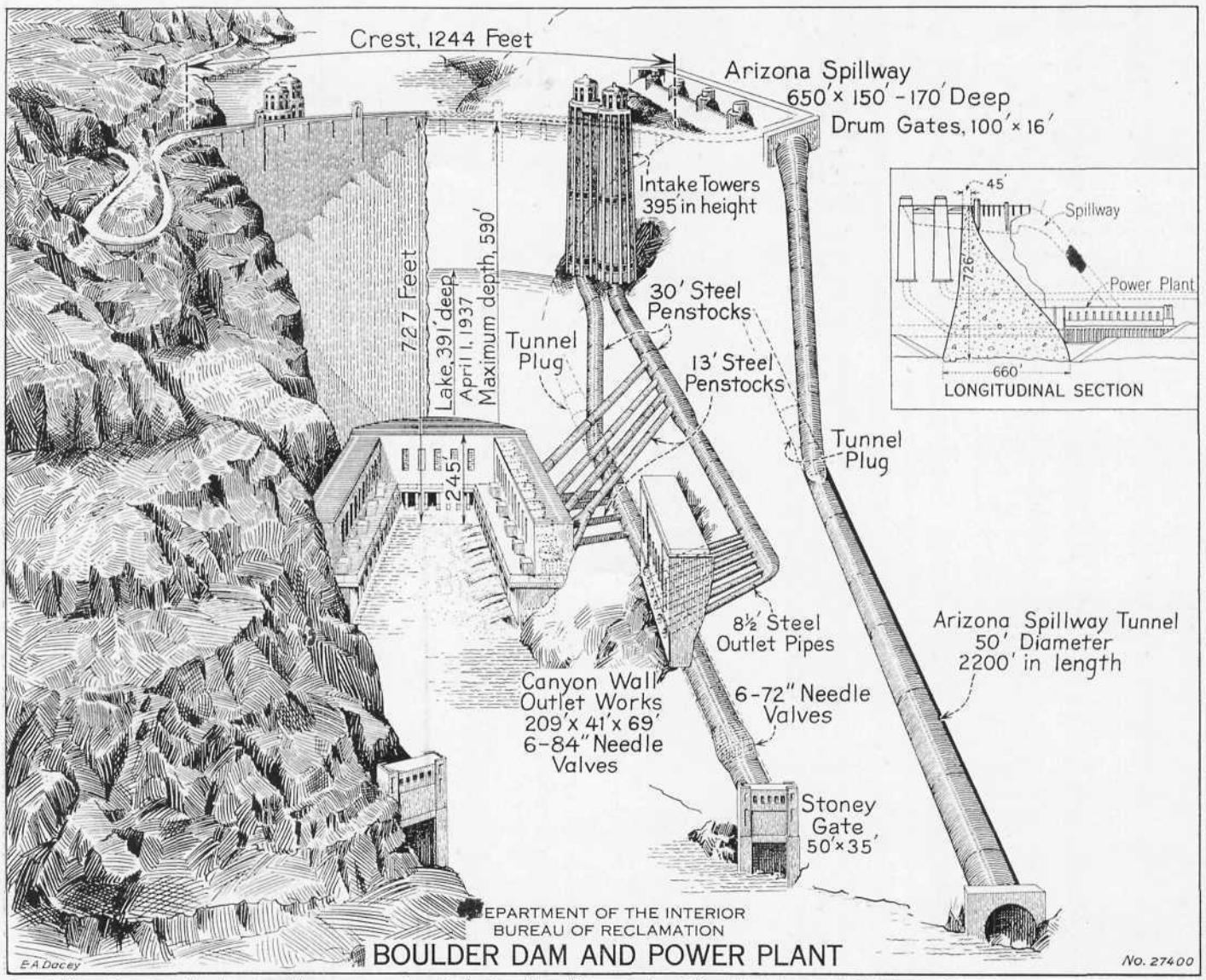
The office is in the curve of a giant U, with arms reaching along canyon walls on each side of the river and housing the largest powerplant man ever built. The powerhouses are as long as a city block and as tall as a 20-story building.

There is a switchboard with five panels along the north wall of the watermaster's office. Three 12-inch dials each with two slender pointers, look like clock faces on the middle panel. These are master gages, automatic, telling the changing story of the river, second by second throughout the 24 hours.

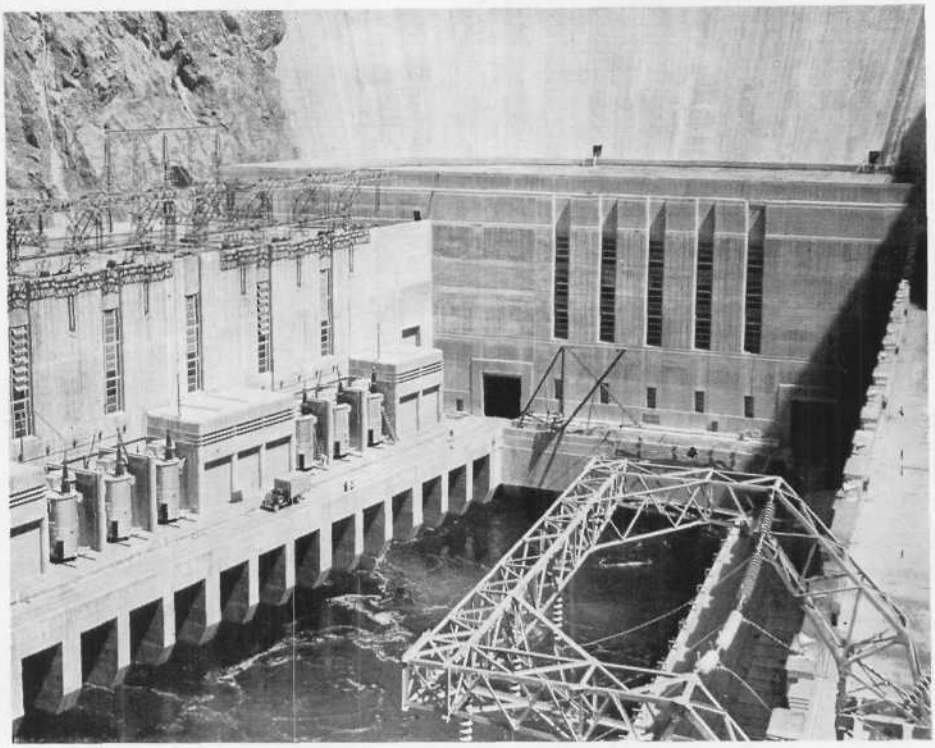
The gage with the word FOREBAY printed across its face shows storage in Lake Mead. A second gage, labeled TAILRACE, indicates water surface elevation at the powerhouse outlet, and the third dial, marked RIVERGAGE, registers the measurement a mile downstream.

Flanking the middle panel are other dials and electric switches, recording and controlling behavior of the great valves on the Nevada and Arizona sides of the canyon, faucets regulating penstocks and tunnels fed from four intake towers upstream.

When he comes on duty Albert's first job is to read the master gages and put these figures on a report form, which has blanks for entries he must make every 30 minutes. The report is



This drawing illustrates the manner in which Boulder Dam works. The Nevada wall of Black Canyon is shown as solid, whereas the Arizona wall is cut away to reveal the intake towers, the spillway, the penstock pipes, and outlet works. Inside the Nevada wall of the canyon a similar set of diversion works has been placed. Principal dimensions are shown.



This is the business end of Boulder dam — where power is being generated to pay for the $160,000,000 *project. Reclamation Bureau photo.*

headed "Release of Water from Lake Mead."

He must record water flow through giant needle valves, each capable of turning loose a small Niagara. He must write down a half hourly report telephoned to him from the powerhouse, giving the volume of water passing through each of six huge turbines. Four of the six generators run by these turbines cost $2,500,000 apiece.

When he adds all these figures from the powerhouse he knows how much water is going down the river toward irrigation requirements for which he gets the orders from Yuma. Imperial irrigation district's 612,000 acres want 6,000 second feet daily; the Yuma project needs 550 feet; Palo Verde, 200 feet and Indian farmers on the Parker reservation ask for 50 second feet. These requirements vary according to season, being higher in summer than winter.

It takes five days for the water to travel from Boulder dam to Yuma and there's evaporation to consider. In summertime, with an irrigation demand of about 11,000 feet, evaporation eats up 1300 feet of water between the dam and Yuma. This loss must be figured in the total volume released, or somebody will get a short order.

Water flow through the turbines fluctuates as lights and kitchen ranges and heaters in southern California homes and motors in southern California industry are turned on and off.

They can tell at the dam, any hour of the day, whether or not it is cloudy in Los Angeles 250 miles away, simply by peering at a gadget in the watermaster's office. An automatic pen marks on a revolving drum every second's flow of water released at Boulder. When the powerhouse load lightens because Los Angeles folks are not using their lights and stoves and motors, the record shows it. When the sun goes behind the clouds over Los Angeles and folks begin turning on more lights, the turbines call for more water. On Albert's chart the change registers immediately.

On the graveyard shift, along about 3:30 in the morning, when nearly everybody in southern California is in bed and the lights are turned out, discharge from the dam hits its low for the 24 hours. This morning at 3:30 the master gages showed only 3,349 feet going out at the tailrace. At 6 o'clock in the evening the peakload of the day called for 9,186 feet, nearly three times as much water.

River Flow Is Averaged

Low and high turbine requirements for the day are averaged and when necessary, the big by-pass valves are opened to give the lower valley enough water to take care of its crops, its livestock and its humans.

A woman could turn the handwheel on a 72-inch valve control, although moving parts of the mechanism weigh ten and one-half tons.

Water rations for cities and for farmers on about 700,000 acres along the 300 miles of river between the dam and the Mexican border are measured out every day now. Los Angeles and 12 cities of the metropolitan district will want a billion gallons daily from Lake Mead when the $220,000,000 aqueduct is in service from Parker dam to the coast region. It will be possible to put an additional 1,300,000 acres under irrigation in the lower valley and plans are already under way to develop a 600,000-acre project on the Gila in Arizona.

Albert will have a great many more water orders to fill then. But it has been computed that Lake Mead will hold enough water to give 5,000 gallons to every inhabitant on earth and he believes his storage supply ought to last at least as long as he lives.

Once—in 1884—the Colorado went on a rampage with a flood of 300,000 second feet. Once the flow at Yuma fell to 66 second feet. These two extremes illustrate the twin disasters fought by the lower valley people in all the years before the dam was built.

Today's control is so delicately balanced that with the turn of a wheel a wave of water could be sent downriver to release your boat from a sandbar, if you should get stuck while navigating the stream.

Albert's shift ends at 2:30. Then Joe Kine, grey eyes twinkling, comes to relieve him.

"Have they told you about the time I flattened out the river?" Joe asks. Then he tells the story on himself. "Our boss, the engineer in charge of the watermaster's office, was away. We got our signals crossed some way or other and did not discover it until the folks down in the Imperial valley began yelling for more water. We had been short-changing them. But temporary shortage was soon corrected when the giant taps were opened a little wider. There is plenty of water here for them and it is our business to see that they get it."

Albert Sharrow says the best dam story he has heard was told on the sweet young bride who came out to Boulder City and after devoting several days in a diligent effort to learn about the big dam her husband was helping build, finally confronted him with this one: "Honey, I understand everything here but one thing: How do they get the electricity out of the water?"

The birds and beasts and idle rich may avoid the rigor of climatic extremes by migration or hibernation—but the most of us have to take our weather as we find it.

We do have the privilege, however, of taking the natural elements and putting them under control and thereby adding to the comfort of our homes and workshops. And that is what is taking place all over the desert region today. Within the past three years air cooling and conditioning has become a factor of tremendous importance to desert people—and the practical application of this new science to the everyday problems of comfort and health has just begun.

There are three general types of cooling equipment now in practical use, and in order that the readers of the Desert Magazine may understand clearly the difference between them John J. Mangel, air conditioning engineer for the Nevada-California Electric Corporation, was asked to write the following article:

Summer Comfort for Desert Dwellers

By JOHN J. MANGEL

THERE are in common use today three types of cooling equipment which are available for the prospective purchaser. They are described briefly as follows:

(1) *Mechanical Refrigeration*—Fig. 1 (Similar to what you have in your household refrigerator.) This type operates by mechanically compressing and alternately expanding a refrigerant (Freon) in a closed system, thereby producing temperatures (40°) considerably below the dew point of the air being conditioned. Air subjected to such low temperatures is not only cooled but also dehumidified by having the moisture condensed out of it. Such a plant when properly designed and equipped with the necessary fans, filters and controls can be depended upon to maintain summer comfort in any climate.

(2) *Indirect Evaporative Cooling*—Fig. 2.

The cooling medium is water cooled by natural evaporation to 70°-80°, and circulated through extended surface or finned coils over which air is in turn passed to be cooled. The usual equipment is a pump, a finned coil, a cooling tower where evaporation takes place, a fan to circulate, and a filter to clean the air to be treated. There are, of course, variations to the arrangement of equipment, but the results are essentially the same due to the limitations of water temperatures.

A plant based on this principle and properly applied produces satisfactory results over large areas of western U.S. where the wet bulb does not, however, exceed 74° F. Conforming to certain psychrometric laws water does not cool by natural evaporation below its wet bulb temperature, and since this temperature is always above the dew point, dehumidification cannot take place as in the refrigeration plant. Generally speaking then, this system, although having considerable merit, has somewhat limited application. Its principal advantage is lower investment and operating cost.

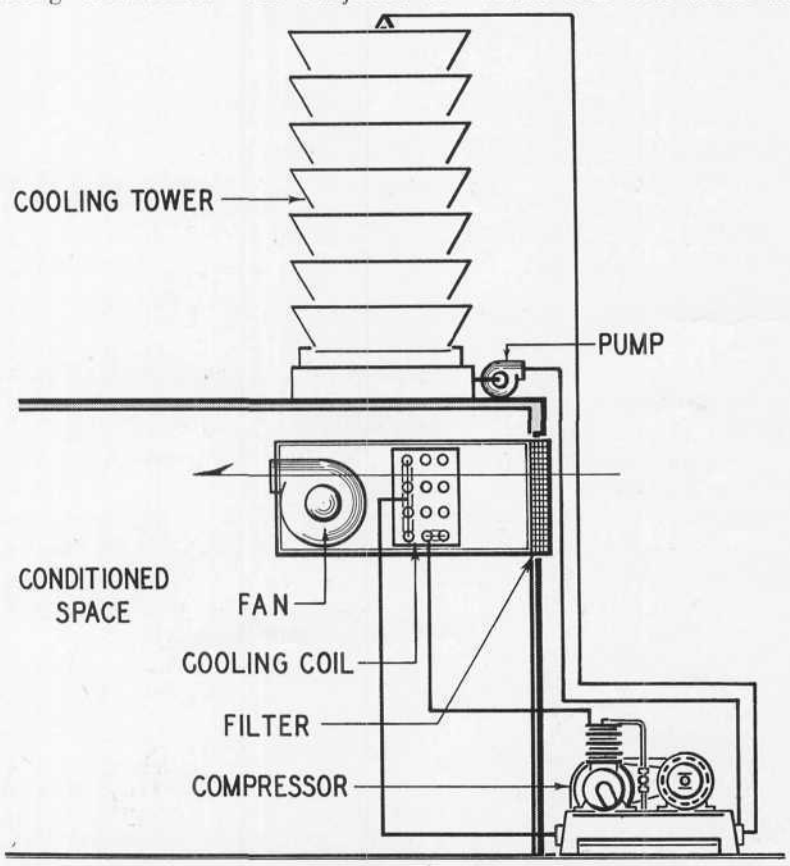


FIGURE-1 MECHANICAL REFRIGERATION

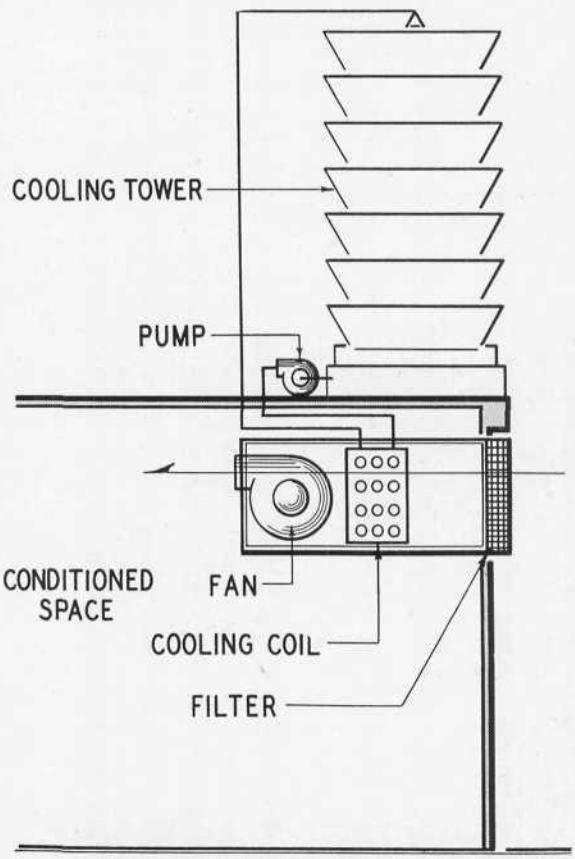


FIGURE-2 INDIRECT EVAPORATIVE COOLING

(3) *Evaporative Cooling*—(Desert Cooler).

This is perhaps the oldest and simplest means known to man. Natives of hot countries the world around devise various and sundry ways to make use of the cooling effect derived from the evaporation of water. Aside from the drying of perspiration from the body, the hanging of wet clothes in rooms, wet tents, sprays on buildings, air washers, and more recently the Desert Cooler, a product of our southwest desert, are all examples.

Volumes could be written recording the personal viewpoints of the layman as to what constitutes physical comfort.

Since a majority of the readers of this publication are dwellers of our great Southwest, it seems appropriate to compare desired conditions in the desert areas with the average for the U.S.

The accompanying chart shows the extent of the "Summer Comfort Zone" as applied to the whole U.S. The dotted line superimposed thereon indicates the adjusted extent applicable to the warmer southwest desert areas.

Since most tables published with regard to recommended air conditions must necessarily be general in scope, the writer favors more modified inside summer conditions as found from experience to be more applicable and healthful to the warmer desert areas. Table A is recommended for conditions to be maintained within spaces with long and continued occupancy, such as homes, general and private offices, hospitals, hotel guest rooms, restaurants, theaters, where the period of occupancy per person is one hour or more. For shops and stores (including drug stores not serving meals) banks, post offices, libraries, public buildings, and hotel lobbies, where the period of occupancy is short Table B is found to be satisfactory and safer for physiological reasons.

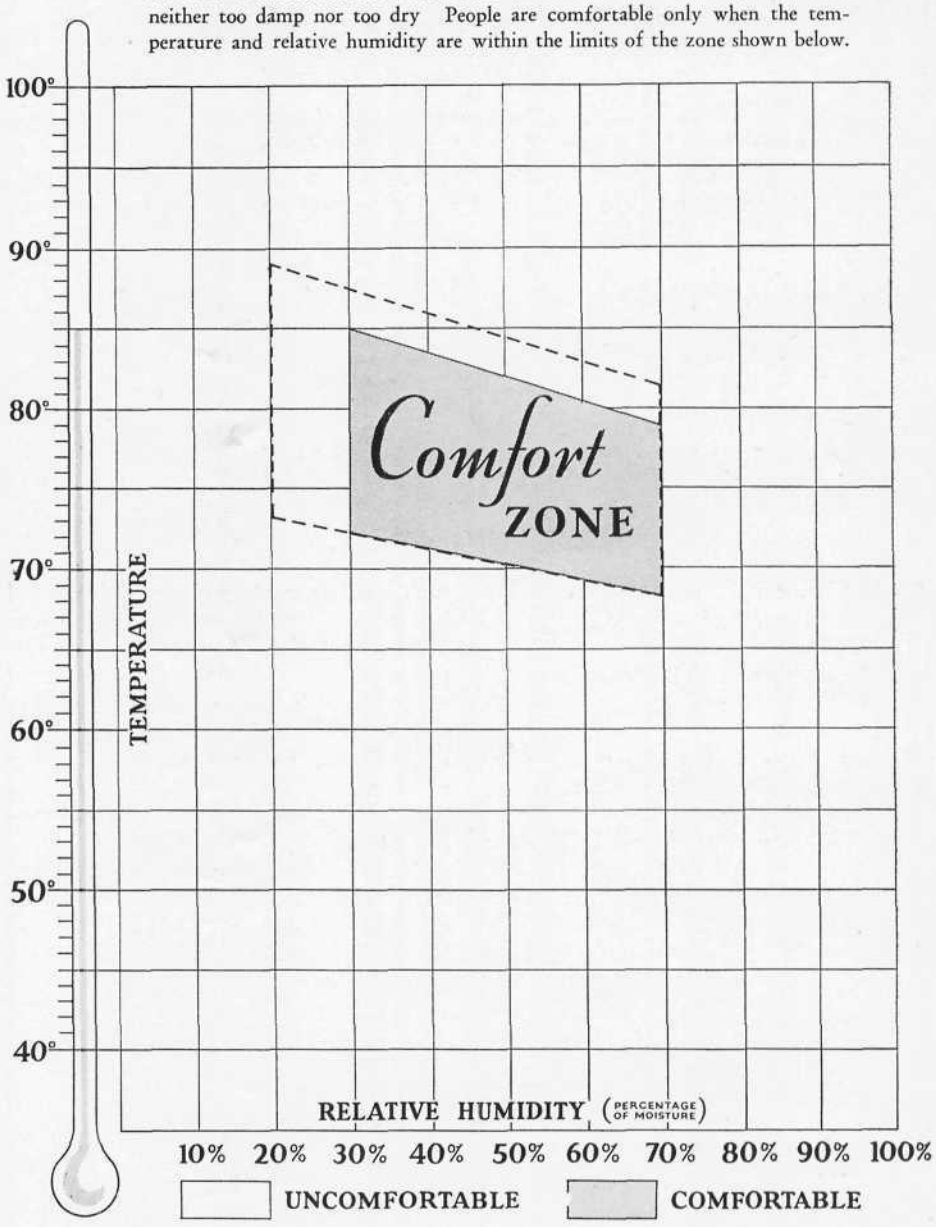
*The relative humidity is maintained constant for several practical reasons. A saturation of 45% is generally accepted as most desirable from the standpoint of health and the preservation of goods, but it also happens to be the average for all summer conditioned spaces in this area. Where departure from the above is necessary or desirable, an equivalent effective temperature should be adhered to.

One should keep in mind for all discussions relative to air conditioning for comfort that optimum conditions recommended as a rule are not the result of individual opinions nor even the conclusions of any one group of persons. They are based upon the finding and research by such organizations as the American Society of Heating and Ventilating Engineers, the United States Bureau of Mines, the American Medical Association and many individuals collaborating.

We are virtually living in an air age. What with aviation, radio, television, and air conditioning, there is the tendency to generate a consciousness of the elements about us as never before. Many believe that history will record air conditioning as the greatest achievement of the age and rightly so, since this knowledge has already brought comfort and health to millions with possibilities still open beyond all appreciation.

WHEN THERE IS COMFORT

For true comfort, the air must be neither too hot nor too cold; it must be neither too damp nor too dry People are comfortable only when the temperature and relative humidity are within the limits of the zone shown below.



OUTSIDE	"A" INSIDE		"B" INSIDE	
Dry Bulb °F.	Dry Bulb °F.	Relative Humidity	Dry Bulb °F.	Relative Humidity
110 (or over)	85	*45%	90	*45%
105	82	45%	86	45%
100	80	45%	82	45%
95	79	45%	80	45%
90	78	45%	78	45%
85	77	45%	77	45%
80	76	45%	76	45%
75	75	45%	75	45%

Helpful Hints for Building Evaporative Coolers

(1) *Use a fan of ample size.*
   (a) The cubic-feet-per-minute air-delivery of the fan should equal one-third to one-half the total cubic feet of airspace in the house.

(2) *Use ample evaporative pad surface.*
   (a) Approximately one square foot area for each one hundred cubic feet of air delivered per minute.

(3) *Pad construction.*
   (a) Pad should be about three inches thick.
   (b) Excelsior should be loosely packed.
   (c) Use horizontal strips in the pad one inch wide to keep the excelsior from settling.
   (d) Construct pad so that it can be removed and opened for replacing the excelsior.

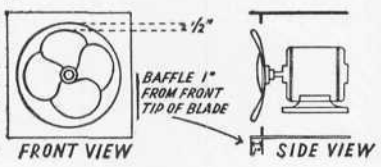
(4) *Make provision for evenly distributing the water at the top of the pad.*

(5) *Provide electric switch and water valve inside the house.*

(6) *Locate air inlet high to prevent drafts.*

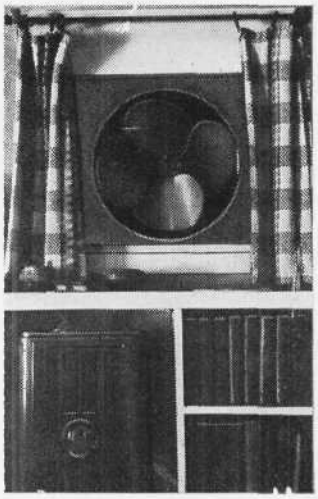
(7) *Make cooler air-tight so that all the air must enter through the evaporative pad.*

(8) *Mount fan as shown in diagram.*
   (a) Use baffle with circular opening one inch greater diameter than fan blade.



OPERATION

(1) Regulate water flow so that there is practically no waste.
(2) Open windows on opposite side of house to allow air to flow through freely.
(3) Do not recirculate any air.
(4) On 3-speed fans, the current consumption is greatly reduced on lower speeds.



(Right) Outside view showing homemade box type desert cooler used on home at Needles, Calif. This unit has a large area of excelsior surface on three sides. There are many variations of pad arrangement.

(Left) Inside view of an evaporative cooler installed in a home at Yuma, Arizona, showing that the inside appearance of the unit can be kept in harmony with the decorative scheme.

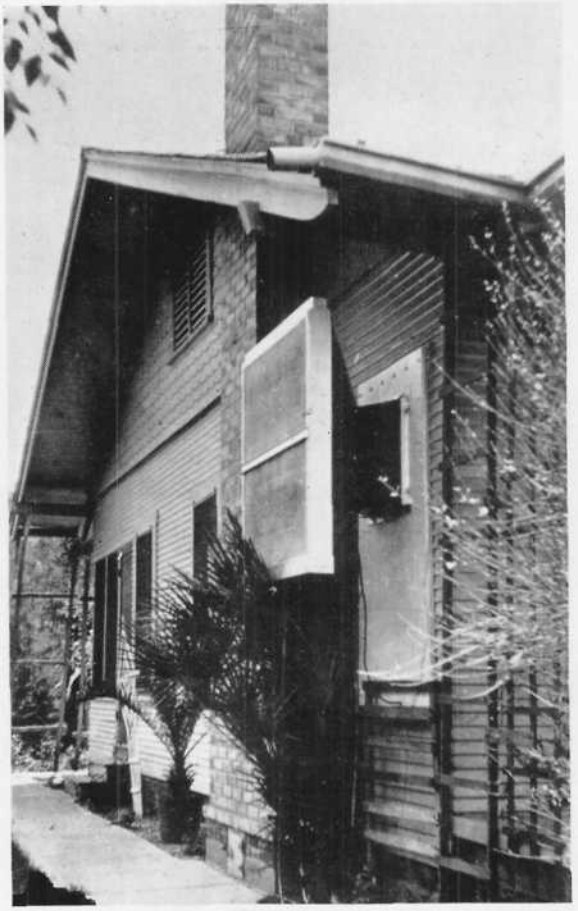
The old-time desert prospector who soaked the burlap covering of his canteen in water and then hung it on a mesquite tree limb to catch any passing gust of wind, was a pioneer in the field of evaporative cooling.

Today, the same principle is applied in the cooling of desert homes and offices—but an electrically-driven fan has been substituted for the fickle desert breezes, and the effectiveness of the method has been multiplied many times.

Summer cooling of homes and workshops within the last three years has become an essential problem to more than a million people residing in the arid Southwest. In an effort to contribute authoritative data bearing on this problem, the Desert Magazine presents herewith the latest information available from the testing laboratories.

Cooling the Desert by Evaporation

By L. G. TANDBERG



One of many designs of desert coolers

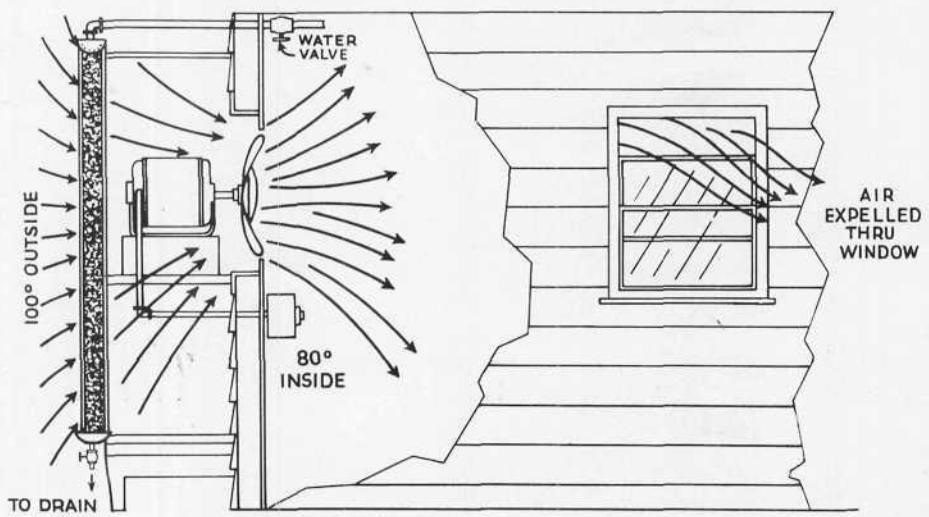
DURING the past fifteen or twenty years, many experiments have been made in space cooling, using ordinary desk fans placed in front of moist burlap, felt or similar materials. The relief obtained in the way of lower temperatures was very largely offset by the increase in moisture content of the air. After a short time the atmosphere became saturated and no more cooling resulted.

About five years ago it was discovered that a fan placed in a burlap-covered box outside of a window gave better results than were produced with a fan placed in the room. At about the same time air conditioning engineers began to recognize the value of cooling buildings by the simple method of introducing a water spray into a large volume of moving air. This method necessitated a comparatively rapid air change in the building to be cooled.

A great deal of experimental work has been done in recent years in applying this principle to home cooling. Obviously, practically all such experimental coolers were home-made, first using desk fans which were readily available. Later when it was discovered that a more rapid air change was necessary, make-shift fans were assembled using motors with automobile fan blades and various other blades, usually of cast aluminum. These were driven at ordinary motor speed of between 1700 and 1300 rpm. They provided the necessary air movement but were objectionable because of noise, excess drafts and lack of flexibility. It has been found that more rapid air change is required when outside humidity increases.

In order to handle the necessary voume of air for rapid change and at the same time reduce the noise to a minimum, fans have been developed that operate at comparatively low speeds and are extremely quiet. These are obtainable with motors having three-speed control so that desired flexibility is obtained. Under favorable humidity conditions these may be operated at second or low speed. The maximum speed is used only at times when higher relative humidity prevails and more rapid air change is desired.

Having been developed as a home made article the original coolers were necessarily very crude, often being made of old packing boxes. It was soon found that many such coolers had an evaporative surface too small for efficient cooling of the large volume of air required. Later coolers were made having evaporative surfaces on the back



and two sides, with the top and bottom closed. This reduced the size of the cooler without impairing the efficiency. Excelsior has been most commonly used for the evaporative pads. While it has its disadvantages, it is inexpensive, easily replaced, and is very efficient in absorbing and evaporating water. Other materials have been used, such as charcoal, spun glass and aluminum shavings.

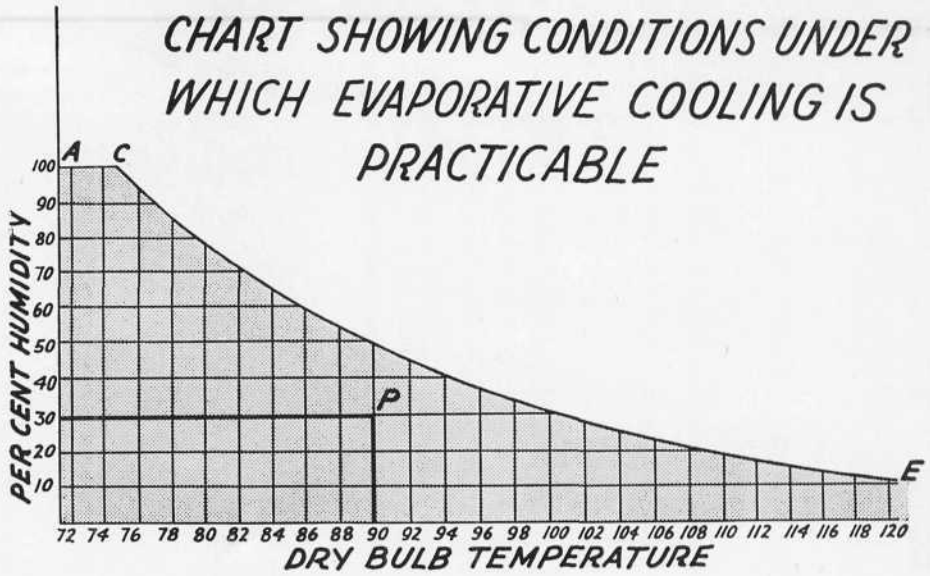
During 1937 many factory-made coolers were offered, incorporating more efficient type fans and having improved construction of evaporating pads and water distribution system. Many of these were made of sheet metal and were painted to conform to the building, resulting in a much better appearance than some of the home made coolers.

In order to obtain proper cooling it is necessary to circulate a large enough volume of air to provide a complete change of air in the home every two or three minutes.

The cooling mat through which the air enters must be large enough to avoid much resistance to incoming air, otherwise the efficiency and cooling effects are greatly reduced. The amount of pad required varies with temperature and humidity conditions. Under the most favorable conditions, a pad of one square foot of area for each 100 cubic feet of air fan capacity per minute may be required. In dry climates smaller pads will be satisfactory. For best results it is necessary to provide an outlet or opening at opposite side of house to allow free air movement through and out of the house.

Evaporative-type coolers can be used economically in localities where high temperatures are accompanied by moderately low relative humidities. They have been used successfully during the summer months in Arizona, the desert and in central valleys of California Nevada, New Mexico, Western Texas, Utah, and parts of Oklahoma, Colorado, Kansas and Nebraska.

The shaded area of the chart on Page 26 shows the conditions under which evaporative-type cooling is practicable. For example, the temperature has been hovering around 90 degrees F. for a few days and the weather bureau reports an average relative humidity of 30%. Follow the 90 degree line until it intersects with the 30% humidity line. If this point (point P) of intersection lies somewhere in the shaded area of the chart it means that evaporative cooling



may be effectively used under those climatic conditions.

Tests conducted by universities and city engineers show that the evaporative-type cooler, when properly installed and operated, constitutes a very satisfactory and efficient form of summer comfort to residents in hot climates where the relative humidity is low. Actual results have shown from 20 to 25 degrees drop in temperature from outdoors to indoors. Last year's experiences of present users of evaporative-type coolers show that during the three summer months their average cost of operating a cooler is from ten to twenty-five cents a day, depending upon the size.

Inasmuch as cooling effect is obtained by the evaporation of water, best results can be obtained when humidity is very low. It is claimed that some degree of comfort can be obtained with wet bulb temperature of 77° or below (approximately 50% relative humidity or less). The lower the wet bulb temperature, the lower the fan capacity is needed. Usually a fan providing an air change of once every three to five minutes will be found satisfactory. When higher wet bulb temperatures prevail, less efficiency results from evaporative method and a much more rapid air change is necessary in order to prevent humidity building up to an uncomfortable point. An inexpensive temperature and humidity meter is a valuable aid in the operation of an evaporative cooler.

Complaints regarding excess moisture in the building usually are a result of too slow an air change. This can be remedied by providing a fan having larger capacity so as to obtain an air change every minute to minute-and-a-half. This will result in considerable draft, but this is preferred by most persons to conditions which are obtained without this air movement.

Where unpleasant odors result from intermittent drying out and wetting the excelsior, ordinary baking soda is effective as a remedy. However, the changing of the excelsior at least once or twice each season will be the best solution.

Because of its economy in construction and operation the evaporative cooler undoubtedly has come to the desert to remain permanently. Refinements will come, but the principle is sound and effective and the time is approaching when air cooling equipment will be regarded as an essential adjunct of every desert home.

Sez Hard Rock Shorty of Death Valley

By LON GARRISON

"AN' YET on the other hand," objected Hard Rock Shorty, "names don't mean a durn thing. Take High Ball Mountain over there . . ."

Hard Rock propped his feet on the porchrail, fired up his pipe, and settled back in comfort.

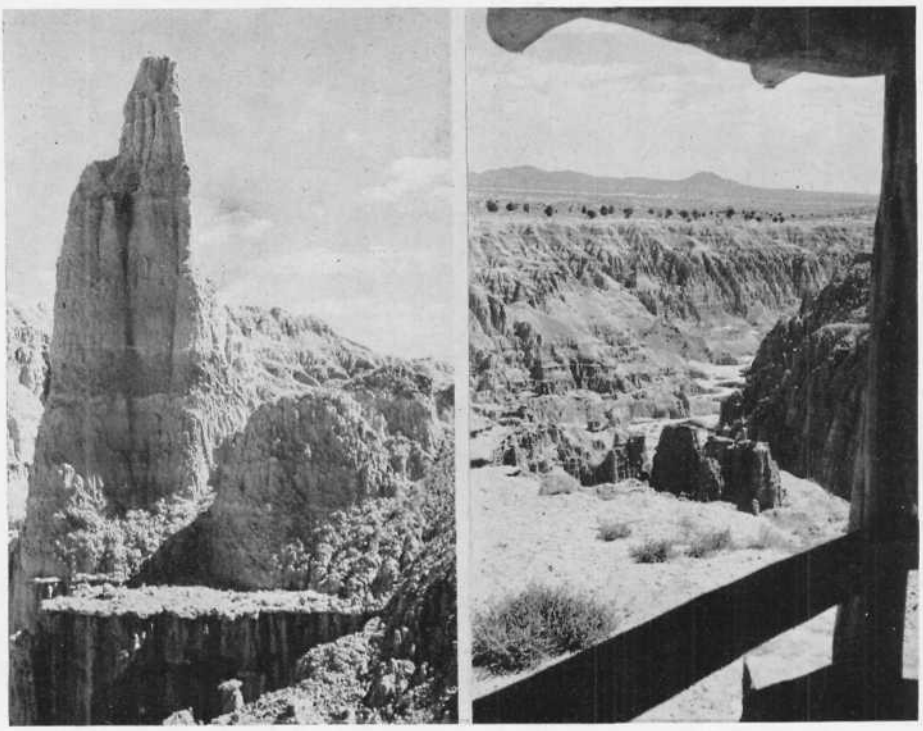
"There ain't a one o' us old-timers here in the Panamints reco'noze High Ball Mountain as anything but Sody Water Mountain. An' the reason for callin' it Sody Water Mountain is plumb simple — there's a sody spring over on the other side of it right along the road. Folks goin' by used to stop an' drink there, an' the wise ones carried along a little vaniller or sassparilla. All they had to do was stir 'er up an' drink 'er—nice and cold and fizzy.

"Here two or three years ago, a coupla hombres come along with a keg o' spirits, an' they stops for a coupla high balls. They mixed a few drinks and then got tired makin' 'em one at a time and dumped the whole keg in the spring. After while they got loaded up and drove on.

"A little while later a party o' them tenderfoot tourists comes along and piles out of their cars to try some of Mother Nature's sparklin' and healthful sody water. It tastes kinda funny but it makes 'em feel right purt so they drink some more.

"An' a coupla hours later when me an' my partner arrives they had drunk that spring dry and was waitin' for 'er to fill up again. When she filled up with plain sody water they decided there's somethin' wrong with the spring and left. So the name of the mountain was changed to High Ball and tourists is still drivin' out there across the desert to find that place they heard about which makes you feel so good you almost love your mother-in-law. Spring's still there, too. Nothin' in 'er but sody water though."

ANSWER Linwood Campbell of Pioche, Nevada, won the $5.00 prize offered by the Desert Magazine in February for the best identification and description of the two pictures shown below. Mr. Campbell's winning letter is printed on this page.



CATHEDRAL GORGE —Near Panaca, Nevada

By LINWOOD CAMPBELL

THIS picturesque canyon, one of Nature's wonderlands, is located two miles northwest of Panaca, Nevada, on the Four States Highway, U. S. Route 93, connecting from Banff, Canada, with Mexico.

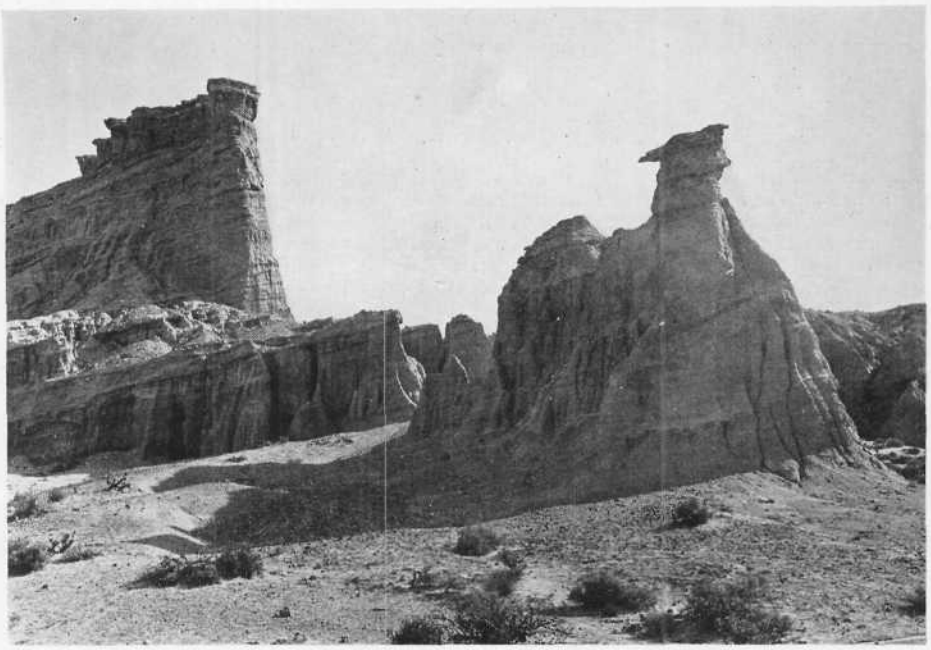
Cathedral Gorge derives its name from the thousands of cathedral-like spires of colored clay, rising in varied and grotesque figures. It contains 1578 acres in a long narrow valley with high perpendicular walls on which these spires are formed.

Into these walls nature has carved many pits and caves that are fantastic and interesting. Entering one of these caves you may find yourself between high walls towering on each side. Soon you may be crawling on your hands and knees through small caverns, again finding yourself in the sunlight or a tunnel large enough to stand erect in. In others you travel down into the darkness, finally running into a blank wall, while far above you can see tiny specks of light. In one such cave a natural half moon has been formed. This cave is appropriately called "The Moon Cave".

Cathedral Gorge was named by Mrs. W. S. Godbe in 1894. It was designated a State Park by Gov. Jas. G. Scrugham in 1926 and was created as a State Park by the Nevada Legislature in 1935. On February 22, 1935, Millers Point was named by the Union Pacific Masonic Club and was dedicated by the St. John Lodge No. 18, F. & A. M. The point was named in honor of Colonel Thomas Miller, who was responsible for having roads and trails built into this sector.

ON THE MOJAVE DESERT

Who can name this Landmark?



Prize Is Offered to Magazine Readers

This month the Desert Magazine goes out on the Mojave desert of California to select a scenic picture for Landmarks contestants.

The striking rock formation shown above is not far from one of the well traveled highways and has been seen by many desert visitors. It is a spot that all out-of-doors folks should know about.

To the person who sends in the correct identification together with the most accurate and informative description of the odd rock formation in the foreground the Desert Magazine will award a cash prize of $5.00.

The letter of identification must not exceed 300 words and should give all available information as to location, name, distance from highway and nearest town, and any other data which may be obtained.

To be eligible for the prize, answers must be in the office of the Desert Magazine by April 20, 1938. The name of the winner together with the prize-winning reply will be published in the June number of the magazine.

GRAPEVINE CANYON —HIKER'S PARADISE

(Continued from Page 17)

need trails in this area because the great Coachella basin is a landmark visible from every high point, and all the canyons and tributaries drain to the desert on the north.

The slopes of the mountains are broken and scarred with deep ravines. Granite boulders are heaped about in wild confusion. At one point near the upper channel of Grapevine creek the rocks are piled in great monuments, as if some race of giants had been there staking out mining claims and marking the location corners with slabs of rock beyond the power of an ordinary man to lift.

If the season is dry it is advisable to carry a canteen in tramping over this north slope of the Santa Rosas. There are many springs, but not all of them have flowing water during periods of prolonged drought.

Nature has provided in this place a scenic park accessible to the casual visitor who does not wish to venture far from the main highway, but it also offers opportunity for those who find a thrill in scaling difficult rock faces and ascending precipitous peaks.

Dead Indian creek has everything, for those who would sense the charm of a secluded desert canyon.

DESERT PLACE NAMES

. . . Compiled by TRACY M. SCOTT . . .

For the historical data contained in this department, The Desert Magazine is indebted to the research work done by Miss Scott; to Will C. Barnes, author of "Arizona Place Names"; to Frances Rosser Brown's contributions to "New Mexico" magazine, and to other sources. . . . . .

ARIZONA

ADAMS WELL — Yuma county.
At lower end Castle Dome mountains. Well dug by Samuel Adams about 1860. According to Fish, Adams was a character of those days. He ran for district judge at first Territorial election and was defeated. In 1866 ran on an independent ticket for delegate to Congress. Was defeated by Cole Bashford. Adams' great hobby was the improvement of the Colorado river, which gave him the title of "Steamboat Adams."

BOWERS RANCH — Yavapai county.
On Agua Fria, 20 miles southeast of Prescott. After Nathan Bowers, early resident of Prescott, member of the first Territorial livestock sanitary board, 1887. Ranch first located by King Woolsey and called Woolsey ranch. "At the Bowers' ranch on the Agua Fria, one sits down to supper in a room which once formed part of a prehistoric dwelling." (Bourke.)

HATTAN POINT — Coconino county.
Canyon wall projection, Grand canyon national park about two miles west of north of suspension bridge, on left bank of Phantom creek. Named for Andrew Hattan, hunter and cook for Powell's second expedition through Grand canyon. "It was Andy's first experience as a cook although he had been a soldier in the Civil war." (Dellenbaugh.)

MUSIC MOUNTAINS — Mohave county.
Elevation 3,971 feet, about 10 miles west of Peach springs. "Named in 1854 by Ives because of regularity of the strata of which it is composed and singular erosive work on the face which gives it distinct appearance of a huge sheet of music, carved on the mountain." (Hinton.) "After James Music, oldtime prospector." (Smith.)

CALIFORNIA

EARP (urp) — San Bernardino county.
A small postal station. From Wyatt Earp, born 1848; came to California in 1864; drove stage from San Bernardino to Prescott and later to Salt Lake, with plenty trouble with Pah-Utes, of whom he killed several; peace officer at several wild cowtowns when railroads were building westward; one of principals in Earp-Clanton gunfight at Tombstone; in 1901 prospected in the Colorado desert and staked Happy Day gold mines, located near the Earp station on the Santa Fe railroad.

IVANPAH — Inyo county.
May be from Ivapi, a Shasta name under Karok tribes. Karok means "the upstream people." It is in Chemehuevi territory and may be from Ivan (dove); and pah (water). Kroeber has no definition for the word.

MORENO or MORENA — San Diego county.
Spanish word for "tanned" or "swarthy." Also a Spanish proper name. Lake belonging to chain of reservoirs in city of San Diego's water supply. The lake has been stocked with game fish and is popular with anglers. In season wild ducks collect on the lake and so do hunters.

TIOGA (ti o' ga) — Mono county.
Grade and pass (elevation 9,941). An Iroquois word meaning "where it (the trail) forks."

VASQUEZ ROCKS (vas' quays) — Los Angeles county.
In Mint canyon near Soledad canyon. At one time a favorite hiding place of Tiburcio Vasquez, notorious bandit, who was hung in San Jose in 1875. Also sometimes called Robbers' Roost.

NEW MEXICO

ABBOTT — Mora county.
Named for Ira A. Abbott of Vermont, who was appointed associate justice of the supreme court by President Theodore Roosevelt in 1904.

CANYON DE OJO CAMARILLO (canyone' day o' ho cah mar rel lyo) — San Juan county.
Literally "canyon of the eye of a small room; a window in a small place." Ojo also means spring (of water); and may refer to a small spring in an enclosed place.

CIMARRON (see mah rone') — Colfax county.
River in Union county. Spanish for "wild, untamed; uncultivated," usually referring to the surrounding country. But may also mean a river full of rocks and rapids.

DEMING — Luna county.
Founded in 1881 several miles east of present site, but moved to junction of Southern Pacific and Santa Fe railroads. Given maiden name of Santa Fe official's wife, whose father was president of the Southern Pacific at that time. C. Frank Allen laid out the Deming townsite on paper but was never there. He named the streets for metals and said later that he was ashamed of having named one street Tin.

NEVADA

PYRAMID LAKE — Washoe county.
Named by General Fremont, January 14, 1844. From the shore he noted "a very remarkable rock in the lake. It rose about 600 feet above the water and from the point we viewed it, presented a pretty exact outline of the great pyramid of Cheops, so I called it Pyramid lake." Pyramid city laid out in 1876.

COMSTOCK LODE

Mining district in western Nevada. Named for Henry Comstock, a Canadian, who with a man named Penrod found ore (1859) that assayed about $4,000 a ton. District at peak of production about 1861, with total yield $340,000,000.

RAGTOWN Churchill county.

Now called Leetville. Name may have had three origins: emigrants changed clothing here and left their old clothing on the banks of Reese river. Early settlers lived in ragged tents. Inhabitants of the new town stuffed rags in broken windows. Founded 1854 by Asa L. Kenyon.

UTAH

BONNIEVILLE Boxelder county.

In 1832-33 a B. L. E. Booneville camped on the Salmon river and gave his name to what is now known as the Great Salt Lake.

BRYCE CANYON NATIONAL PARK

In 1860 Ebenezer Bryce, a Mormon pioneer, discovered the canyon now bearing his name. Established as a national park September 15, 1928. Total area 35,240 acres.

KAIBAB (kai' bab)

National forest in Utah and Arizona. Ute word meaning "mountain lying down."

Weather

Clouds, Rain, and Floods in Los Angeles Coastal Plain—Sunny and Warm in Desert

February Report from U. S. Bureau at Phoenix

Temperatures	Degrees
Mean for month	56.4
Normal for February	55.1
High on February 7	77.
Low on February 18	34.
Rain—	
Total for month	0.55
Normal for February	0.77
Weather—	
Days clear	9
Days partly cloudy	8
Days cloudy	11

W. B. HARE, Meteorologist.

From Yuma Bureau

Temperatures	Degrees
Mean for month	58 2
Normal for February	58.6
High on February 10 and 28	78.
Low on February 18	35.
Rain—	
Total for month	0.58
67-year average for February	0.41
Weather—	
Days clear	14
Days partly cloudy	6
Days cloudy	8

Sunshine 75 per cent (232 hours out of possible 308 hours).

Colorado River—

February discharge at Grand canyon was 360,000 acre feet. Discharge at Parker 325,000 acre feet. Estimated storage behind Boulder dam March 1—14,960,000 acre feet.

JAMES H. GORDON, Meteorologist.

Here and There . . . ON THE DESERT

ARIZONA

FLAGSTAFF . . .

Failure of the Navajo tribal council, which meets only once a year, to act on applications for permits authorizing scientists to carry on researches on the reservation has created a deadlock. Commissioners of northern Arizona counties have adopted a resolution which will be presented to Congress in an attempt to clarify archaeological as well as mining rights on Indian reservations. Navajo governors did not feel justified in determining responsibility of applicants for research permits.

GLOBE . . .

Reorganization of the International Vanadium company by a group headed by Dr. P. F. de Villiers of South Africa, is announced here. At holdings 28 miles southeast of Globe new buildings are being erected and new equipment will be installed, according to Dr. de Villiers, who says mining and millling operations will start as soon as possible.

PRESCOTT . . .

Three thousand members have been pledged for the Arizona association of small mine operators, it was announced after a conference here attended by delegates from all sections of the state. Councils will be organized at 20 mining centers. To attract capital to new mining, it is hoped to make Arizona "a tax paradise like Nevada." Thumping approval was given by 150 delegates to a resolution endorsing old-fashioned prospecting practices. Commending the laws of 1872 allowing mineral entry on discovery, the resolution says that without this legal provision "the wonderful west would still be unpopulated save by Indians and horned toads."

PHOENIX . . .

Most fascinating problem encountered in three months of travel through the Sierra Madre mountains of Mexico is: Who was the blue-eyed, red-haired white man who lived for years with the wild Apache remnants of Geronimo's band?" This is what Dr. Helge Ingstad, Norwegian explorer, told Phoenix newspapermen on his return from a Mexican expedition. Dr. Ingstad's mission was study of the little group of Apaches who chose exile rather than surrender in 1886 to officers of the United States army. He says the few surviving Indians "live like eagles" in one of the world's greatest beauty spots and are "the healthiest looking human beings I have ever seen." Fights with Mexicans have almost wiped out the Apaches and women predominate in the Indian band, he believes. He says of the last 20 Apaches killed in fights with Mexicans, 17 were women dressed like men.

TUCSON . . .

After nearly a quarter of a century's service as director of the state museum at the University of Arizona, Dr. Byron Cummings will retire on July 1. Dr. Emil W. Haury, associate professor of anthropology, will assume the duties Dr. Cummings lays aside. The university's board of regents has voted the title of director emeritus for Dr. Cummings, who resumes in April work on restoration of prehistoric Kinishba ruins, near White river in east central Arizona.

WICKENBURG . . .

Arizona's lamb crop is heavy this year and shipment of "Easter" lambs to eastern markets is under way. According to Jerrie W. Lee, secretary of the Arizona Wool growers, 234,000 head of sheep were pastured in the triangle marked by Wickenburg, Casa Grande and Buckeye.

HOLBROOK . . .

Permission has been granted by Navajo county supervisors for the federal Indian bureau to purchase 23,000 acres of land at $1.67 an acre from the Arizona-New Mexico Land company for the use of the Navajo Indians. In 1934 the southern boundary of the Navajo reservation was extended to include 147,000 acres that was property of the Arizona-New Mexico company. In exchange the company was to select 147,000 acres of public land in Coconino, Navajo and Apache counties. Since 1934 the company has selected 124,000 acres but has been unable to locate the last 23,000. Under the present plan the company will be paid for the remaining acreage and the Indians given clear title to the land.

AJO . . .

Prehistoric animal bones are being unearthed in a cave near Sonoita by a group of scientists, said to be working under sponsorship of the American Museum of Natural History of New York.

HOLBROOK . . .

World famous Petrified Forest will be promoted to status of a national park, if a bill soon to be introduced in congress becomes a law. Rated now as a national monument, the Forest would receive more care and maintenance from the park service under dedication as a park.

TUCSON . . .

Coyotes are an asset and not a liability to the forest service, says H. Garvin Smith, assistant supervisor of the Coronado national forest, in defense of a predator cattlemen curse. Smith does not believe coyotes kill many calves. He thinks they are useful because they do kill foxes which damage forest growth.

YUMA . . .

Short-staple cotton acreage allotments for Arizona counties as provided in the new crop control bill are: Maricopa, 113,820; Pinal, 39,280; Yuma, 14,880; Graham, 11,280; Pima, 5,933; Greenlee, 954; Santa Cruz, 480 acres.

CALIFORNIA

IMPERIAL . . .

In Fish Creek canyon, Imperial county, Earl Coleman and Robert McKean mined a truckload of Iceland spar, used in making optical lenses. State mining bureau officials say there are several deposits of this material in California, notably in San Bernardino county and near Darwin. Price runs high, but there's a catch in it. Much of the spar is damaged in mining and the operator collects only for material the lens-makers are able to use.

VICTORVILLE . . .

A board of army engineers sponsored the call for a public hearing here March 3, to discuss need of flood control, water conservation, soil erosion prevention along the Mojave river. A. J. Lintner heads a survey committee which prepared a report and arranged for appearance of witnesses.

TWENTY-NINE PALMS . . .

Surveyor H. Fred Peterson has published a new map of Twenty-nine Palms and vicinity, showing all roads, mines and wells, mountain ranges and the boundary lines of the new Joshua Tree National Monument.

BLYTHE . . .

Weeds have been burned along 200 miles of county roads in the Palo Verde valley's cooperative campaign. "Untold quantities" of stink bugs, field mice and other pests perished in the weed killing effort, says W. M. Mowry, county agricultural inspector. War on gophers, now nearing end of its second year, has covered nearly 37,000 acres.

CAMPO . . .

Veteran prospectors from the Mexican border to Searchlight were invited to attend a mining opportunities conference in Los Angeles, scheduled for March 10, under auspices of the Mining Association of the southwest. Purpose: to show their best ore samples to prospective investors who might back legitimate operations with a few hundreds or a few thousands of dollars.

INDIO . . .

In an effort to protect the well known "fish traps" on the south side of Coachella valley from vandalism, County Engineer A. C. Fulmor of Riverside has recommended that the board of supervisors acquire the property from its private owners. The traps are loose rock formations along the old shore line of Lake Cahuilla and have been the subject of considerable controversy among archaeologists.

PALM SPRINGS . . .

Formal petition for incorporation of Palm Springs as a municipality of the sixth class has been filed with county supervisors. Five hundred petitioners signed, proposing a community of seven councilmanic wards in an area of approximately 20 miles.

EL CENTRO . . .

Robert Hays, secretary of the Four States Highway association, believes a newly discovered pass through the Chuckawalla mountains will be chosen for a direct road from Imperial valley to Boulder Dam and Nevada, Idaho, Montana and Canada.

GARNET . . .

Recently included in the Riverside county highway system, the Metropolitan aqueduct road running from Garnet to intersection with Highway 60 east of Indio will be known as the Garnet cutoff. The Little Morongo road, also formerly owned by the metropolitan district, has also been accepted by the county.

PALM SPRINGS . . .

Dwellers on the desert who predict climatic changes along the route of the Metropolitan Water district's $220,000,000 aqueduct will be produced by water flowing through that big channel from Parker to the coast are all wrong, says Dr. George F. Taylor, meteorologist. Outside of a radius of ten feet from the aqueduct it will be impossible to detect any atmospheric change, he asserts.

PALMDALE . . .

"Volcanic mixture" deposit near here, said to contain about 30 metallic and non-metallic minerals, including nitrates, phosphates, potash and sodium, will be ground in a mill and marketed as fertilizer, according to a local announcement. For the mixture it is claimed that it will reclaim alkali land, sprout lettuce in 48 hours, and stimulate growth of any type of field or garden product. "If the product will do that," says a Tehachapi newspaper, "it is worth ten times its weight in gold."

BRAWLEY . . .

California's state park commission has voted to acquire unoccupied land in western Imperial county and eastern San Diego county for the proposed Anza State Park. Area will stretch from shore of Salton Sea to Jacumba, from Coyote Wells to Riverside county line.

NEVADA

CARSON CITY . . .

Nevada's Colorado river commission has announced terms it will approve in adjustment of dispute over sale and distribution of Boulder dam power and allotment of power revenue. Annual guarantees to Arizona and Nevada are provided in existing law. Proposed amendments are subject of controversy between these two states and southern California purchasers of power.

LAS VEGAS . . .

An Indian war axe, found at the base of Fortification mountain by Leonard Atkinson of Boulder City, has been dated by Archaeologist W. S. Park as belonging to the basket-maker period of about 400 A.D.

Writers of the Desert

Members of the Desert Magazine staff send a welcome greeting to Oren Arnold of Phoenix, whose feature story in this number, "They Found a Market for Rattlesnake Bones" is his first contribution to these pages. While new to the Desert Magazine, Oren is by no means a novice in the field of writing. His books and magazine features already are well known to readers of Southwest lore and literature. There will be more features from his typewriter in the future. We're proud to have his by-line in this magazine.

• • •

Many good manuscripts have been coming to the Desert Magazine office from Phoenix during the past few weeks—more than from any other postoffice. The old idea that the Salt River valley produces nothing but cotton and melons and alfalfa will have to be revised. Tucson, Palm Springs and Santa Fe are supposed to be the cultural centers of the desert Southwest—but as far as the Desert Magazine is concerned Phoenix also is entitled to a literary rating.

• • •

According to reports coming to the Desert Magazine, the old Bradshaw stage road in Southern California leading up Salt Creek wash to the site of the Canyon Springs stage station, has seen more traffic during the past four weeks than ever before since gold-rush days. The reason: gem collectors seeking Bloodstone specimens in the Orocopia field described by John W. Hilton in the March number. Many nice stones have been found in the area. And we are pleased to report that the collectors without exception have observed Hilton's rules for good sportsmanship on the desert.

• • •

Don Admiral, whose informative nature stories have been appearing regularly in this magazine, recently has been named as curator of the newly opened desert museum at Palm Springs. The museum includes both natural history specimens and Indian relics. It already has received a number of new contributions from public spirited residents of the Village and Admiral has plans for expanding the exhibits with historical pictures of manuscripts, as well as a complete collection of desert flora.

• • •

For the information of those who would contribute verse, the Desert Magazine cannot accept poems of more than 24 lines. This restriction is made necessary by the desire to include as many poems each month as space will permit.

• • •

June Le Mert Paxton, who writes the "Creed of the Desert" feature, lives in a little cabin out in the Joshua Tree desert toward 29 Palms—"The Joshuas" she calls her home. She also contributes to other publications. Her two daughters are teachers in Los Angeles schools, one of them an instructor of journalism.

BOOKS OF YESTERDAY and TODAY

—a monthly review of the best literature of the desert Southwest, past and present.

POPULAR DESERT HANDBOOK IS RECENTLY REVISED

THE DESERT is austere and forbidding only to those who have not penetrated the mask which the arid region presents to superficial observers.

To the student who has the desire to see beyond the drab exterior and understand something of the plant and animal life and the natural history of this fascinating region, Edmund C. Jaeger's handbook, "The California Deserts", provides an open doorway.

Recently a revised edition of this book has been published by the Stanford Press at Palo Alto, California. ($2.00).

Jaeger tells of the desert's past, of its aboriginal inhabitants, its physiographic aspects, climatic features, flora and fauna—in fact, all of the essential information the average reader will wish to know about two of America's greatest arid regions, the Mojave and Colorado deserts.

The author writes with authority of a scientist who has made a close study of his subject—and yet the material is presented in the popular style of an elementary textbook.

There are chapters on birds, reptiles, shrubs, flowers and other classifications of desert life, accompanied by pen sketches which will aid in identifying the subjects.

Malcolm J. Rogers of the San Diego Museum contributed a chapter on prehistoric Indian life in the desert, and Dr. S. Stillman Berry wrote several pages on "Snails and Mollusks".

Altogether, the book is a well-rounded primer of desert information with the added merit of being entertaining reading.

RHYMES FROM THE LAND OF THE JOSHUA TREE

"But the desert, pal, is where I dwell—
Where I call Heaven, you may call hell."

A little book of verse written in and about the Mojave desert comes from the pen of H. G. Peavler of Lancaster, California. "Rhymes of the Singing Sand" is the title, and its pages reflect both understanding and love for the land of the desert rat and the burro. Not poetry, just rhyme of the homely kind that every reader can understand.

THROUGH THE EYES OF AN EASTERN TENDERFOOT

MEN and women who live by choice on the Great American desert will not become enthusiastic over the book of an eastern writer who describes the arid Southwest as a "desert tiger", and who warns readers, "Let no one who loves his hide camp on or east of the San Bernardino mountains."

"The Trail of the Desert Sun" by Ray B. White, is another of the many books containing the superficial observations of an eastern tenderfoot during a hurried motor trip through the West. Such books generally amuse Westerners.

However, they are not without merit, because it always is interesting and sometimes helpful to get a view of ourselves as others see us. Desert people hardly could be offended by the remarks of a writer whose knowledge of the arid region was obtained during two midsummer days as he speeded across the southwestern states in company with other easterners who felt it was necessary to keep their heads swathed in wet towels to preserve their lives.

But the desert is not a total loss—even to Ray B. White. Discussing the attachment of the Navajo and Hopi for their desert abodes, he concludes: "The place must not be so terrible after all. Not that I would live there of my own choice for anything! No. But I would not be deaf even to the call of the desert . . . I must somehow add it to my soul, or to my personality—anyway you wish to put it. Not its aridity, nor its fruitlessness, but its profound enigma, its imperturbability, its colorful vistas, its impenetrable silence."

—R. H.

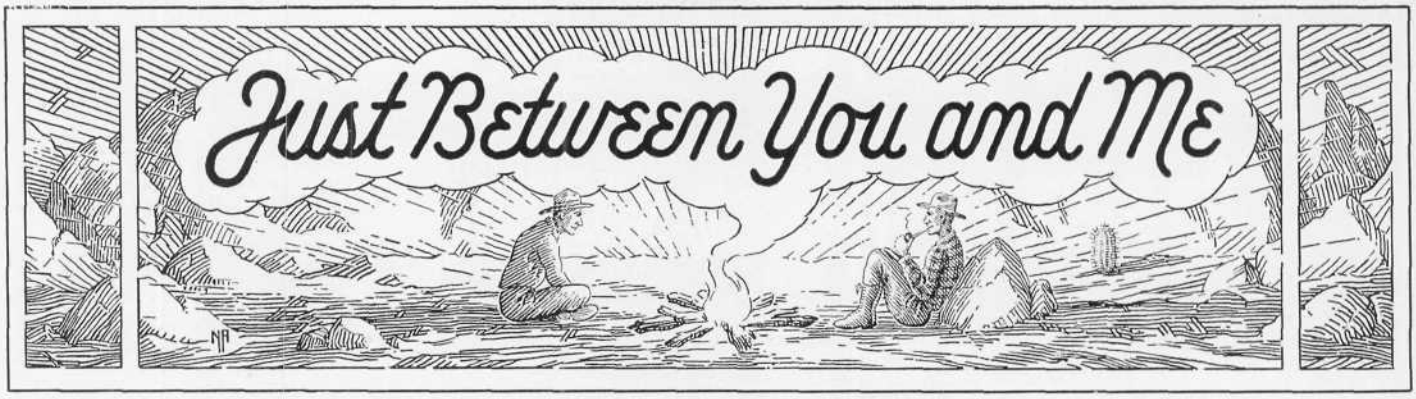
NAVAJO IS SUBJECT OF NEW ARIZONA BULLETIN

Published by the State Teachers College at Flagstaff, Arizona, a comprehensive bulletin recently has been published titled "The Navajo". This is the second of a three-volume set announced some time ago covering Indian tribes of the Southwest. A previous volume "The Hopi" met with such a widespread demand that the edition is practically exhausted.

Dr. T. J. Tormey, president of the college, expresses grateful acknowledgment to Ross Santee, state director of the WPA writer's project; Robert Eunson, assistant director, and Dr. Edward A. Kennard, for their work in editing the publication, and to Dr. Harold S. Colton and the Museum of Northern Arizona for helpful cooperation. The bulletins sell for 50 cents.

DIVISION OF MINES PUBLISHES BULLETIN

Under the direction of Walter W. Bradley, state mineralogist, the California division of mines, Department of Natural Resources, recently has issued the July, 1937, issue of the California Journal of Mines and Geology. Copies may be obtained at the offices of the Division of Mines in Sacramento, San Francisco and Los Angeles at a cost of 50c.



By RANDALL HENDERSON

SINCE the desert folks are all going in for air cooling devices of one kind or another, the Desert Magazine this month is devoting some of its pages to a discussion of cooling problems.

Perhaps the outside world is not aware of it yet, but the perfection of air cooling equipment is changing the whole aspect of life on the desert—at least in the communities large enough to have electrical service. It is the most revolutionary thing that has taken place in the high temperature zone since man began diverting water for the reclamation of arid lands.

The well-equipped home in Salt River or Imperial valley during the period of extreme summer heat is now more comfortable than the average home in San Diego or Los Angeles. In the coastal area, air cooling is still regarded as a luxury. Here on the desert it has been accepted as a necessity. The air-conditioning industry may thank the people of the desert for practical pioneering in a field which potentially is not less important than automobile transportation or radio entertainment.

* * *

Being one of the old-timers on the desert I will confess I still have a feeling of guilt when I go to bed in an air-cooled room. I wonder if I am going soft. But the younger generation has no such misgiving. Air cooling is here to stay. There is no doubt of that—and the old "summer heat" bogey man who gave the women and children—and the men who could afford it—an excuse for a prolonged vacation in the mountains, is losing cast.

* * *

But while the air coolers are changing the manner of life in the desert towns—they are not changing the desert. There still remain the canyons and sand dunes, the hidden springs and palm oases where you and I may go when we will and find Nature's own handiwork—undisturbed by the greed of men—and the seclusion which is so good for the human soul at times.

* * *

Last week I received a friendly letter from James A. Jasper who served as supervisor of San Diego county from 1893 to 1906. San Diego county then extended to the Colorado river, including the present area of Imperial county. The old road signs he erected across the Colorado desert are still standing—monuments to a public official who did his job well.

More than any other mail which comes to my desk I appreciate the letters from the real pioneers of the desert frontier. Usually they give interesting sidelights on early desert history—information not found in the books. I am preserving all these letters in a special compartment—and sooner or later the records they contain will be passed along to readers of this magazine. I know of no finer service we could render than to make this office a clearing house for assembling and preserving the historical information aavilable from men and women who helped make the history.

Among those who already have contributed are Ed. F. Williams who rode herd in Arizona before the days of the white man's reclamation projects, H. E. W. Wilson who remembers when the original 17 palms were standing at the spring of that name in the Borego Badlands, Elmo Proctor who lived in Conchilla valley at the time when a clerk in Washington misspelled the word and changed the name to Coachella as it is known today, Charles Battye who lived among the Mojave Indians when some of them still wore G-strings, and R. H. Theilmann who watched the Rockwood gate at Pilot Knob go out in 1905.

There are many others—both men and women—who came into the desert forty or fifty years ago and pioneered the way for good roads and cities, and the agriculture and commerce of today. Few of them acquired riches—but they learned habits of clean living and straight thinking, otherwise they would not have survived the rigors of a desert which has no place for weaklings.

* * *

As this copy is being written, early in March, rains are falling quite generally over the desert region. In another two or three weeks the desert will present a panorama more colorful than usual. The burroweed, which more than any other plant with the exception of Creosote bush, gives the desert its prevailing color-tone in the spring months, will be in full leaf. Ocotillo will be blossoming, cacti will be in bud, and a hundred species of wildflowers will be adding their bright hues to the landscape. If you would see the desert in its brightest raiment, plan your outing between the middle of March and the latter part of April.

* * *

And now, I've got this Chuckawalla business all cleared up—at least, to my own satisfaction. My esteemed friend Edmund C. Jaeger writes:

> "I think we are justified in spelling the word with an 'a', or without it. Many of the Indians and most native desert people always say 'Chuckawalla'; hence we find the name Pushawalla applied to a canyon near 1000 Palms. This is a name given by the Indians and cowboys, and doubtless is a word coined to harmonize in a certain way with Chuckawalla. The latter is an old Indian name and like Mohave may have a number of corruptions. You will find Mohave spelled Mojave and Mohahve and even Maharve in the old writings."

* * *

So that's that—and you may take either spelling you wish. But please do not call it "Chuckerwaller."

What Our Customers Think—

Fred R. Bright is a prominent grower and shipper of Imperial Valley and an enthusiastic booster for "CATERPILLAR"

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PHON
EL CENTRO

March 5, 1938

Ben Hulse Tractor and Equipment Co.
1414 West Main Street
El Centro, Calif.

Attention: Ben Hulse, President

Dear Mr. Hulse,

Your sales department has asked me to outline my reasons for using "CATERPILLAR" equipment on my ranches in growing, packing, and shipping perishable products.

In order to maintain level prices for perishable products, we must never flood the market at any time. Obviously, land must be prepared on an even program. If this program should be broken, our production would be slowed or speeded, resulting in a thinning or glutting of the market--and poor returns.

After watching "CATERPILLAR" tractors in operation and having my contract work done with "CATERPILLARS", I decided to purchase only "CATERPILLAR" tractors for my own use. This I have been doing for several years. At present I own three RD 4's.

When considering the purchase of equipment for even operation, I also consider the service the dealer can offer. Upon investigation, I find your Company keeps an adequate stock of parts at all times, as well as a trained mechanical force at the disposal of "CATERPILLAR" owners. I want to assure you that your Company has at all times furnished us with as near perfect service as I think possible.

Very truly yours,

Fred R. Bright

FRED R. BRIGHT CO.

Fred R. Bright:cd

Mr. Bright's letter expresses the thoughts of scores of Ben Hulse customers who have tested "CATERPILLAR'S" reliability

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